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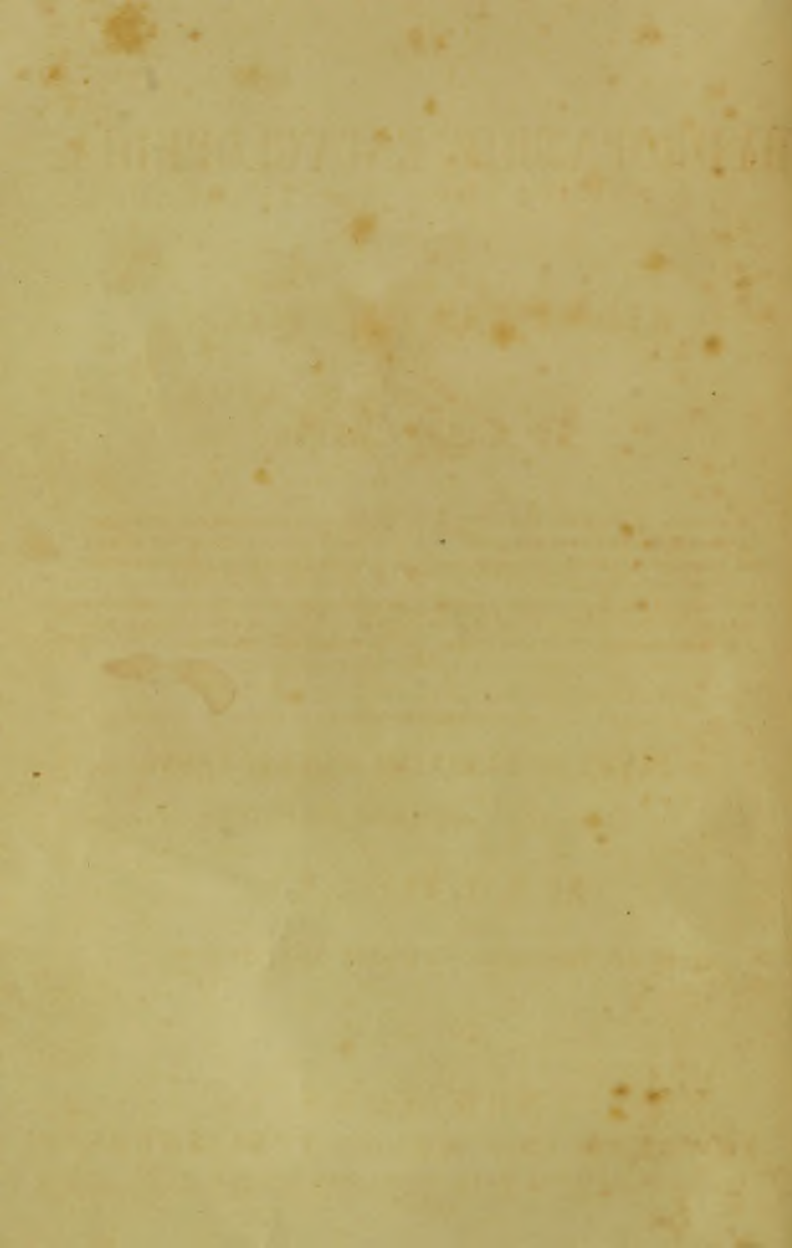
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THE

# HYDROPATHIC ENCYCLOPEDIA:

A SYSTEM OF

## HYDROPATHY AND HYGIENE.

*In Eight Parts:*

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| I. OUTLINE OF ANATOMY, ILLUSTRATED.                     | VI. SPECIAL PATHOLOGY AND HYDRO-THERAPEUTICS, INCLUDING THE NATURE, CAUSES, SYMPTOMS, AND TREATMENT OF ALL KNOWN DISEASES. |
| II. PHYSIOLOGY OF THE HUMAN BODY.                       | VII. APPLICATION TO SURGICAL DISEASES.   |
| III. HYGIENIC AGENCIES, AND THE PRESERVATION OF HEALTH. | VIII. APPLICATION OF HYDROPATHY TO MIDWIFERY AND THE NURSERY.  |
| IV. DIETETIC AND HYDROPATHIC COOKERY.                   |  |
| V. THEORY AND PRACTICE OF WATER-TREATMENT.              |  |

DESIGNED AS

A GUIDE TO FAMILIES AND STUDENTS.

AND A TEXT-BOOK FOR PHYSICIANS.

BY R. T. TRALL, M.D.

*With Numerous Engraved Illustrations.*

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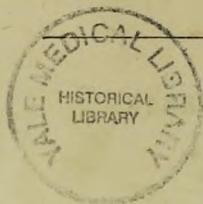
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# HYDROPATHIC ENCYCLOPEDIA

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## PART V.

### THEORY AND PRACTICE.

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#### CHAPTER I.

##### PHILOSOPHY OF WATER-CURE.

RELATIONS OF WATER TO THE HEALTHY ORGANISM.—Before we can clearly comprehend the remedial relations of pure water to the morbid conditions of the body, we must understand its physiological or vital relations to the healthy organism. These may be stated most succinctly, and remembered most easily, in the form of distinct propositions.

1. Water constitutes the greater proportion of the entire bulk of the body.

2. Water composes more than three fourths of the whole mass of blood; more than seven eighths of the substance of the brain, and more than nine tenths of the various colorless fluids and secretions.

3. Water is the only vehicle by which nutrient matters are conveyed to the blood, and through the blood to all parts of the system for its growth and replenishment.

4. Water is the only medium through which waste or effete particles, or extraneous ingredients, are conveyed from all parts of the system to the excretory organs to be expelled.

5. Water is the only solvent, diluent, and detergent in existence, for animal and vegetable alimentary and excrementitious matters.

6. Water is the only material capable of circulating in all the tissues of the body, and penetrating their finest vessels, without vital irritation or mechanical injury.

7. The only morbid effects of water result from improper tempera-

ture, and over-distension of the hollow viscera, or circulating vessels, from excess of quantity—effects never necessarily unavoidable.

MODUS OPERANDI OF WATER.—Contrary to the teachings of the standard medical books of allopathic, homeopathic, and eclectic schools, we must ever bear in mind that disease is never a *positive entity*, but always a *negative quality*; it is the absence of health, or of the state, circumstances, and actions which constitute that balance of functional duty we call health. By referring to the misuse or abuse of some one or more of the hygienic agencies, we find the *cause* or *causes* of those deviations from the *normal* state, which constitute the abnormal state, and which we call disease; and now, by applying the above propositions to the causes which produce and the conditions which constitute disease, we will find the true grounds which indicate and demonstrate water to be a remedy of general, and even universal application.

In a general sense, diseases are produced by bad air, improper light, impure food and drink, excessive or defective alimentation, indolence or over-exertion, unregulated passions, in three words—unphysiological voluntary habits. The conditions of the body in disease—the *proximate causes* against which all remedial efforts are to be directed—are, in general terms, impure blood, unhealthy secretions, obstructions in the minute vascular structures, or capillary vessels, excessive action in some parts or organs, with deficient action in others, unequal temperature, etc., in other words, a *loss* of balance in the circulation and action of the various parts of the vital machinery, producing great discord in some portion of it, and more or less disorder in all. The general indications are, therefore, to remove obstructions, wash away impurities, supply healthful nutriment, regulate temperature, relax intensive and intensify torpid action, etc.; and what like water, what *but* water, with its concomitants, air, light, food, temperature, etc., can answer to these indications?

To say that medicinal drugs can answer these indications is sheer nonsense. They may respond to any other indications almost that can be named; but these, *never*. They may change the issue, they may suppress a symptom, remove a pain, transfer an irritation, excite a new vital resistance, produce *another* obstruction, and so divide the organic struggle between two points, diminish vital power, or increase vital expenditure; but none of these impressions or effects are really remedial, none of them meet the indications; and if physicians in general, and mankind in particular, are not satisfied with the experiments of three thousand years, which, by the way, have destroyed ten times as many of the human family as they have saved, let them by all means *be satisfied*, even if they have to go on in the same absurd,

blundering, and senseless, though may learned and scientific business, of dragging and lifting, marring and mending, for three thousand years longer.

Water, according to the mode of application, constitutionally or moderately any function; it can enervate or abate any given action; it can be made to increase or diminish temperature, locally or generally, to any extent desired; hence, though not a universal cure—the diseases are not universally curable—it is a remedy universally applicable. But while water, judiciously managed, may be doing its appropriate work in allaying or curing disease, other causes may counteract, retard, or entirely prevent the consummation of any curative process. The patient may live badly in other respects; something in his eating, or drinking, or sleeping, or exercising, or other voluntary habits, may be wrong, and constantly re-supply the causes of disease as fast or faster than the best remedial use of water can remove or overcome them; therefore, though water is put persistently forward in the hydropathic system as in all cases the great panacea, it must ever be recollected that it is but one of several remedial agencies whose influence is equally to be regarded in procuring health or in curing disease.

To illustrate: Of fifty or a hundred individuals at a hydropathic institution, while all may employ water in the way of bathing in the best possible manner, one half of them will pretty certainly hold on to some unimpartial habit which retards or prevents the cure, or renders it imperfect. One will abide on cashes or fruits between meals; some in the cities will lack an onion or plum-pudding; some will eat fish immoderately; others will persist in the use of butter or greasy meats sufficient to keep them constantly ill; others will take salt enough to keep the whole body pelted, as it were, in its solid being; others will eat an undue proportion of fine flour, and keep the bowels all the while congested; others will continue to make up by the "stimulus of distension" for the lack of mustard, vinegar, and pepper; others will drink tea or coffee, chew tobacco, or smoke cigars occasionally; and yet others will indulge in a dose or two of drugs now and then, suddenly, of course; and so on to the end of the chapter of "errors in Water-Cure." It is true all these things are ruled out of the establishments, but they are, notwithstanding, very extensively practiced by many patients; and what is particularly vexatious, ungrateful, and perverse, all the evil consequences of their bad habit are usually imputed to the Water-Cure!

It may be said that the physician ought to manage all these matters, and make all patients conform in all respects to a physiological regimen. This is not always possible, for with many individuals habit is much



stronger than reason, and with some dyspeptics the craving of the morbid appetite for its disease-producing elements, and anæmisms, and morbidities, is not a whit more governable than is the drunkard's appetite for those intoxicating poisons which have produced his morbid craving. Both kinds of appetite are controlled, and finally overcome by a few; but not experience tells the story that the majority are conquered and destroyed by them.

In accounting for the therapeutic operation of particular processes of the water-treatment, we must never forget that Nature is the true physician. The restorative power is inherent in the living organism. All that the true healing art can do is to supply favorable conditions, remove extraneous materials, and regulate hygienic influences, and then place the system as fully as possible under organic law.

The humoral pathologists equate all diseases to a *leuesis*, or morbid matter in the blood; while the solidists and vitalists contend that the action of the solids—being too much increased or diminished—is the possible cause of all diseases. The former blood, leech, scroful, blower, sweat, purge, stimulate, and antiphlogistics; and the latter blood, leech, scroful, blower, sweat, purge, stimulate, and antiphlogistics too! Here is diversity of cause producing identity of effect; a position not dreamed of in natural philosophy.

We may apply water to the treatment of disease, on either theory, much more rationally than the alchemist can his drugs and dietetics. Whichever theory we adopt—and both are carried to a certain extent—we can alter, expel, change, increase, restrain, or modify the fluids and actions with water and vapors, as well as with leeches and drugs, and with some of their *increasing* side or *ever present* dangers. We can even get arsenic, chlorals, and other drug embelisms out of the body by means of water-treatment, whereas the *ex plus alius* of drug medical science consists in getting the system full of them, and then abandoning it to its fate, and "the efforts of nature."

It is no disastrous circumstance for patients to become severely debilitated during water-treatment. I have treated several cases wherein patients who had taken no mercury for several years, experienced all the symptoms of a "mercurial course," such as tender, fiery gums, metallic taste, foul breath, swelled tongue, and copious drooling. Other mineral poisons also produce great constitutional or local disturbances during the process by which they are expelled from the body. These drugs, as already intimated, all the other drugs in creation have no power to remove from the body. They may, like acids and alkalis, induce each other's specific action, or combine to produce a different action; but they do not and cannot drive each other out of the system.



The manner in which water purifies the body from mercury and other mineral poisons, effluar medicines, affords an explanation of its mode of action in a great variety of morbid conditions. Referring to the laws of excretion and excretion, as explained in the physiological part of this work, we find that when animal excretions, living or dead, and whether connected to or separated from the body, have their opposite surfaces in contact with dissimilar fluids, an interchange takes place, which is continued until the constituents of both fluids become exactly similar, when all action between them ceases. Dr. E. Johnson (*Domestic Hydropathy*) has constructed the following diagram, which very well illustrates this subject:

In fig. 102 a is a glass tube, the diameter of whose outlet is five tenths of an inch. Close one of its ends accurately with a piece of bladder, and fill the tube with brine. Now take a much larger tube (b)—a common tumbler will do—and fill it three quarters full with pure water. Then immerse the bladder-end of the small tube just under the surface of the water of the larger tube or tumbler, giving it an inclination of about 45°. In a short time a current of liquid will be seen rising from the bottom of the water in the tumbler, upward along its side, in the direction indicated by the arrows, through the bladder, and up along one side of the small tube to the surface of the brine; then it descends along the



OSMOSIS AND EXCRETION.

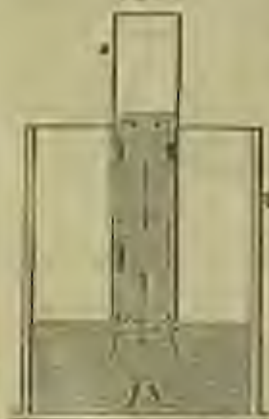
other side of the small tube, in the direction of the arrows on this side, down through the brine, and through the bladder, down to the bottom of the water. The downward current is a current of brine descending into the water in the tumbler. The upward current is a current of pure water ascending into the tube to supply the place of the lost brine; and the current will continue until the two fluids have become similar, that is, until the fluid in the basin has become as salt as that contained in the tube.

"If now the tumbler be emptied, and refilled with pure water, the current will be re-established, and in this way the brine in the tube may be completely purified of its salt.

"The currents will be seen with beautiful disquisitions if some very

Gas particles of indigo be suspended in both fluids—that is, the bladder, and that in the tube.

FIG. 30.



EXP. 1000—AND EXP. 1001.

—If the tube *c*, in fig. 30, which contains the bladder, have a valve whose diameter is four-fifths of an inch, and if it be stopped vertically, so that the bladder will be immersed just below the surface of the water in the tumbler (*b*), two currents will be seen to ascend, in the direction of the arrows, through the bladder, one on either side of the tube, to near the surface of the brine. They now turn, and descend together as a double current through the middle of the brine in the tube, down through the bladder into the water, where they diverge, turn again, and again ascend. The double current descending through the middle of the tube is a current of brine coming down into the water in the tumbler. The two separate water

currents ascending from near the surface of the water in the tumbler, are two currents of water going up through the bladder into the tube, to supply the place of the brine which has descended into the water.

—Now, when pure water is held in contact with the external surface of the skin of the body, by means of the wet sheet, or any other means, precisely the same conditions are established with regard to the fluids within the body, that is, as the inside of the skin, and the water which is in contact with its outer surface, as are established in fig. 30, between the fluid (brine) contained in the tube, that is, on the inside of the bladder, and the water in the tumbler, which is in contact with the bladder's outer surface. About eighty per cent. of the blood is water, and it is this water which holds in solution whatever soluble substances, whether poisonous or otherwise, happen to be present in the blood; and it is this water, holding in solution acids, alkalies, and the various salts proper to the blood, which alone circulates in those myriads of millions of millions of capillary vessels which are too small to admit the red particles. When any poisonous matters are present in the blood, it is in the water of the blood that they are held in solution, as the salt is held in solution in the water of the brine.

—Now when by means of the wet sheet, pure water is held in contact with the outer surface of the skin, and supposing that the water

of the blood, which is on the inside of it, is present, say with bicarbonate of mercury, what happens is this: An interchange takes place between the fluid on the outside (pure water) and the fluid on the inside, viz., the water of the blood holding backbore of mercury in solution. The mercury-and-water passes through the skin into the water of the wet sheet, while the pure water of the wet sheet passes through the skin into the blood to supply the place of the mercury-and-water. As in figures 152 and 153, a double current is established; a current of pure water into the body, and a current of mercury-and-water out of the body; and in this way, by frequently renewing the external contact of pure water with the skin, the blood is purified of whatever poisons or substance morbid matters it may happen to contain.

"If a glass tube be partially filled with a saturated solution of salt (brine), one end of the tube being loosely tied over with bladder, and if the tube be suspended in the air, in a short time that side of the bladder which is exposed to the air becomes covered with salt. The brine passes through the bladder from the inner to the outer surface. When it reaches the outer surface the water evaporates, leaving the salt adhering to the bladder.

"When a person has taken the nitrate of silver for a considerable length of time, it is well known that the skin becomes colored permanently blue, from the deposit of oxide of silver in the tissues of the skin, the nitrate being converted into a simple oxide.

"It would seem that something similar happens here, with regard to the salt of silver (nitrate of silver) and the skin, as happens with regard to the salt of the brine and the bladder, in the experiment just described above. The water of the blood holding the nitrate of silver in solution, passes through the outer layers of the skin until it reaches the rete mucosum, which lies immediately under the scarf-skin, not traveling along the perspiratory apertures, but permeating the tissues. Having reached this locality, the water of the blood evaporates, while the silver, unable to penetrate the dry and horny outside, is left fixed in the rete mucosum."

Similar experiments may be tried, with similar results, with any of the soluble metallic, mineral, or earthy salts, as of arsenic, sodium, sulphate of potassa, &c. I have known mercurial ulcers take place during water-treatment, on the lower extremities of patients whose bodies had years previously been thoroughly mercurialized, and which it was impossible to heal until after the body had become entirely cleansed of the poison by several months' treatment.

above facts amply demonstrate the superiority as well as the more rational philosophy of the water-treatment over the drug-treatment or the humoral theory. But the vitalists have much to say about "dynamic forces." With them every thing goes by impression, or stimuli. Disease is produced by morbid impressions on the brain, or nervous system, which impressions are conveyed to the various organs or parts of the body by nervous distribution, or functional sympathy; and remedies operate by electric, magnetic, chemical, thermal, or some other forceful property which makes impressions on the nervous centers, and these impressions are thence radiated through the system, and counteract, arrest, or subvert, or in some other most mysterious and utterly inexplicable manner, cure disease, or, perchance, by some unfortunate and unaccountable circumstance or accident, render it worse.

But there is something of matter-of-fact in this theory, as, indeed, there is in nearly all the theories which have ever possessed man's mind. We know that natural impressions do disturb or modify, arrest or energize either and all of the functions of the body, and these impressions may be morbid or salutary; they may produce disease or remove it. But on this principle of physiological impressibility, is there not a better way of exciting counteracting morbid impressions than by drawing off the vital current, or passing the body through and through with poisonous drugs? Cannot some reply in the affirmative, and all rational minds, influenced by a misdirection, would respond, "there must be a better way." And here our "universal panacea," pure soft water, supplies the desideratum. On the theory of impressibility it is just what is desirable, and all that is requisite, if suitably aided by the other hygienic adjutants. All the impressions made on the living body can only affect its functions as they produce or arrest action or motion, which action or motion is usually contraction. Cold water and ice are naturally the most powerful constricting agents that can be applied to the living structures without destruction or injury; and hot water, or steam, is the most efficient relaxant that can be safely employed. For producing moderate contraction or relaxation, we have all degrees of temperature between the freezing and the boiling points.

The remedial effects of water, thus far considered, are a complete substitute for all the depuratory processes of the regular system, as bleeding, leeching, extirpation and refrigerating; and all the classes of medicines called emetics, cathartics, diaphoretics, diuretics, alteratives, tonics, and stimulants. But these are other classes which are called anastics, nervines, and sedatives, to which opium, morphor, ether, musk, castor, hyosine, scabiosa, digitalis, walloha, and others



after *lancis* belong, which at first view seem more difficult to dispense with. There is something like a charm in the idea of sending down the sick person's throat a dose which silences his pains and quies his distress with magical celerity. But the charm is at once dispelled when we look to ultimate consequences. The very pain which the potent and ill-directed dose of the doctor has subdued is generally the warning voice of the organic instincts that something is wrong, or the effect of the organism to rid itself of an enemy. When the organic instincts proclaim to the whole domain of life, through the medium of the brain, that an enemy is present, that proclamation is *felt*, not *heard*, and its language is pain. It is one thing to silence the outcry of nature for help, but it is quite another thing to relieve her by dislodging the enemy. The first may often be done by narcotics and stimulants; the second can be accomplished by the use of water. In fact, water will often succeed in promptly removing pain which the most powerful narcotics fail to mitigate. There may be inflammation, obstruction, engorgement, distension or constriction, the pain of which all the opium that can be taken short of deathful doses will not alleviate, and yet water of some temperature and in some form of application will relieve at once.

There are also classes of medicines called *acids*, *alkalies*, *asthizinics*, *lithontriptics*, *decalcifics*, etc. Now, it may be asked, is water to substitute them? Simply by obviating the occasion for them. A patient has a sour stomach, and the doctor gives him soda; another is afflicted with worms, and the doctor administers something to poison them to death; another has gravelly concretions, and the doctor administers chemical solvents; another has scurl bile which corrodes his throat, and the doctor prescribes lubricating enemata, and so on to the end of life. But who cannot perceive that all this practice, as a part of the healing art, is absurd and ridiculous? Who so stupidly blind as not to see that it is a mere patch-work, tinkering at effects without removing causes? The water-treatment corrects the condition upon which the existence of these abnormal symptoms depend, when of necessity they all disappear.

In the works of the popular system we read much about "accelerating the change of matter," in order to reinvigorate the tissues and reinvigorate the functions. To do this it is recommended to bleed, purge, and mercurialize the patient down, and then, presto! wine, oysters, and "quantum diet," to stimulate him up again as fast as possible, thus doing and undoing interchangeably. Bathing, with appropriate air and exercise, and plain simple food, will effect a change of matter immeasurably more rapid, and without the destruction of healthful materials,

or the injurious + dynamic effect of alcoholic poisons. If there is surplus matter about or within the body, water will wash it away, and if there is a deficiency of organic material, pure food and good digestion are the natural means to supply it.

Again, the water-treatment, by regarding the skin as the leading expiating function of the body, follows out the indications of nature herself, which expels the greatest amount of morbid agents, whether miasmata, effete organic matters, or drugs and medicines, from the body, through the cutaneous channels. Instead of wearing out the elementary canal, where but a small quantity, comparatively, of waste or offensive matter is ever found, with horribly poisonous emetics and bowel-scraping cathartics, the principal detergent process is directed to the skin, where usually five or six times the amount of extraneous matters are got rid of, that is, thrown off by the bowels.

There is a principle recognized in the allopathic school, called counter-irritation or *antipogonism*. Indeed, some late authors have gone so far as to consider it the fundamental principle of the whole drug and depleting system. It is based on the supposed law of the animal economy, that nature, or the vital powers, cannot maintain two different kinds of morbid action in different parts of the body at the same time. Thus, if a man has an inflammation of the stomach and bowels, and you produce a severe inflammation of the mouth and salivary glands with calomel, the stronger morbid excitement will absorb, as it were, the lesser inflammatory action; the latter will then get well, after which the doctor may cure the drug-disease he has produced—the salivation—if he can. Such practice has no claim to the title of *healing art*: it is doing an irreparable injury, with the latent possibility of a greater good. *Blisters, leeches, cathartics, and the endless compounds*, in the stage of *irritating diseases and stimulating diseases* are proffered on no better philosophy than that of removing one evil by producing another.

But admitting the fact that one disease then engenders, or sustains, or supercedes another, the usual explanation is, I think, incorrect. This vaguely-conceived "law of the several excitements" is really no law at all. It is the mistake that the vital powers make to morbid agents, which pathologists have mistaken a law of the several economy. Two diseased actions, or diseases in two different parts of the body, or abstracting or affording materials in two or more parts or organs, will manifest different phenomena from what are observed when one part or organ only is affected, because vital resistance is then distributed in several points instead of being concentrated at one.

If a person is laboring under a fever, that morbid action of the organs

len which we designate the *fibric purgation* is the manifestation of the vital struggle to defend the organic domain against some morbid cause, or to expel some injurious cause. If the vital powers are making the principal effort to the surface, the introduction of a cathartic dose of opium salts would divert some part of this vital effort to the bowels to meet, defend against, and expel the new enemy which is committing its ravages there, and thus purgation would result, while the depurating or remedial effort to the skin would be materially diminished. The seat of war would be changed, or the battle-field divided, but so far from being "a friend in need," the saline purgation, by drawing off and wasting a portion of vital power, would only prove a "far indeed."

The water-treatment does not operate on the principle of *intoxication or counter-irritation*, according to the popular theory, for it does not produce a train of morbid actions constituting a new specific disease; nor does it put foreign, acrid, irritating, and deleterious ingredients into the blood, to produce some powerful impression at a dash, and then leave the vital powers to war against and waste themselves in counter-acting or removing them for months and years afterward. It has been objected, that a cold bath was a morbid impression, as much as a hot blister, because it is an artificial instead of a natural method of applying water. But this argument is short-sighted. A cold hip-bath, for example, produces exactly the same vital phenomenon, action and reaction, that our limbs are subjected to every day, and hour, and moment of our lives, differing only in degree. The first impression of the cold water causes the blood to recede from the capillaries; but the vital powers soon meet the impression by an increased determination of blood to the part, to balance the temperature of the body, and soon the capillaries become distended with blood, the part red, turgid, and in a warm glow. If this process is frequently repeated, the general result is to develop the superficial or capillary circulation of the part, and to that extent unload the vessels elsewhere, remove internal congestion, etc. If the impression is too strong for successful vital resistance, if the water is too cold for the ability of the patient to react, of course the opposite effect results: internal congestion is increased, and we have *the cause* of the hygienic or remedial agent.

This determination to the surface in consequence of the impression of cold water, cannot be called a morbid action in any sense. If we go out of a comfortably warm room into a very cold atmosphere, our hands and face may at first become pale, cold, the vessels contracted and bloodless; but on returning to the room, and often under the continued application of the cold, reaction takes place, and they soon

appear more red and turgid, and feel warmer than before their exposure, for a few minutes, and then return to their usual appearance and feeling. So the slight disturbance of the circulation produced by voluntary bathing is merely an intensified contraction and relaxation, amounting to temporarily increased action, and followed by the same harmony of circulation as existed before. Atmospheric influences, vicissitudes of temperature, variations of exercise, etc., when not extreme or violent, produce temporary disturbances of the circulation, which, so far from being morbid, are really salutary, nay, indispensable to full health and vigor. Nature allows us a liberal range of intensity in the employment and enjoyment of agencies naturally harmonious with our structures and functions.

But how different is the case if we take into the domain of life a substance chemically incompatible with its structure, or one agent physiologically incompatible with its functions. Although they are met with the same vital resistance as a cold bath, or a hot bath, their temporary impression is soon succeeded by absolute equilibrium and quietude. They leave either a mark or a void in their track. When chemically incompatible, as are all the metallic and mineral preparations, they act upon, corrode, decompose, and destroy some part or portion of some constituent of some solid or fluid, of some organ or structure. Familiar and melancholy examples of chemical incompatibility are found in the ulcerations of the mucous membrane of the mouth, throat, stomach, and bowels, produced by the ordinary employment of salivars in cooking, and the rotting of the teeth and bones in consequence of a mercurial course. When they are physiologically incompatible, like alcohol, tobacco, opium, etc., they exhaust, irreparably, some portion of the vitality itself. The exposures of drug-agents of all kinds are constantly destructive or exhausting so long as they are kept up; but the impressions from cold bathing may be continued during a whole lifetime without injury.

It is true that, in water-treatment, we apply cold water to the body when hot, hot water when cold, etc., not to antagonize action, but to balance action; the grand general indication in treating all diseases by disquisitions being to equalize the temperature, circulation, and action. The principle of antagonism, as practiced allopathically, tends to silence the efforts of nature, to counteract the vital powers, to suppress the organic instincts, to obstruct the *vis medicatrix nature*, to enfeeble the cure, and, in the majority of cases, to place the life of the patient in greater jeopardy than it would be with no medication whatever.

The true philosophy of water-cure, in almost every essential point,



of doctrine, is theoretically antagonistical to the prevailing theories of the allopathic schools.

Some of the homeopaths have lately discovered that water acts as their favorite principle—*omnific similis curatur*. It is to my mind inconceivable how water can produce, in infinitesimal or any other quantity, any other dynamic effects than such as are referable to temperature, bulk, or solventy. Water is the agent which homoeopathically employs to dilute, and thus “enlarge the surface” and develop the pithogenetic property of its remedies; but how it is to be reduced to its third or thirtieth potency by dilution, is a problem which may be easily laid away among the unworkables.

The eclectics, who “select the good and reject the bad” of all systems, claim that water acts like a hundred other drugs which are in “harmony with the constitution.” They pretend to exclude all poisons, and use nothing but the “innocent remedies,” which are best adapted to “aid and assist nature;” but, unfortunately for their fair pretensions, we find a variety of vegetable and even mineral poisons among the everyday prescriptions of their writers and practitioners, as preparations of opium, and preparations of iron.

**RA-TIONALE OF DRUG-MEDICATION.**—All the standard works on physiology and therapeutics of the drug schools throw out a solitary ray of light on the *modus operandi* of drug-medicines. The effects which a thousand different drugs produce upon the various functions of the human body, under almost all conceivable variations of condition and circumstances, have been investigated with gain-worthy industry, and recorded with tedious minuteness and extraordinary precision. But why, how, and *wherefore* these effects are thus and so, we are as ignorant, as far as their labors are concerned, as are the students of the masses, who, it is presumable, do not have access to their books. Why tartar emetic or ipecac produces vomiting, why jalap or scammony purges, why mercury or tobacco salivates, why opium or cannabis produces perspiration, why nitre or green tea produces diuresis, why Squibb’s fluid or boiling water raises a blister on the skin, why calomel or pink operates as a hemorrhagic, why clove or iron operates as an emmenagogue, etc., etc., are problems as deeply in the dark now as they were before the light of medical science dawned upon the world, for all that appears in the writings of the standard authors, or the teachings of drug professors.

But, fortunately for humanity, the principles upon which this explanation is founded are stored in the world. Sorely and steadily they are working their way into the understandings of reading and thinking

people, and just so soon as they are generally acquainted with the drug system of treating diseases be among the things that were. These principles are more fully developed in the writings of Sylvester Graham than in those of any other author. The works of George Combe contain some illustrations of them. The writings of Dr. Laidlaw, Dr. Abbott, Dr. Jennings, and Ransom, showed by teachings predicated on their recognition, while the practice of Prescott and his followers is constantly demonstrating the correctness of the explanation which they afford. I will try to present this matter clearly, for I am most unshakably convinced that the individual who fully understands it will be exceedingly loth to swallow any apothecary drug, whether it go by the name of drug-poison or drug-medicine; and he who has both philanthropy and intelligence will be as unwilling to administer these foreign agents to other examples, as to take them into his own.

There is a class of medicines known as *tonics*, or strengthening medicines. Books on *materia medica* define them to be such articles as give tone, or tonic contractility to the wasting fibres, and at the same time augment the activity of the digestive function. Now among the tonics we find a most incongruous set of materials, as quinine, arsenic, bismuth, iron, wormwood, oak bark, quassa, aloes, *chauliobis*, copper, zinc, &c. All authors agree that if the use of a tonic is long continued, the effect is debility. Here is a paradox. A tonic medicine first strengthens, and then debilitates. How are these results to be accounted for?

When a drug-medicine of any kind, or a poison of any kind, is taken into the stomach, the organic instincts recognize the presence of a something which is neither food nor drink; something unnatural; something which has no constitutional relation to any want or duty of any part or organ, hence an intruder, an enemy. The vital powers feel an attack upon the circle of life, and prepare to act defensively. The living membrane of the stomach is aroused to increased action; an unusual quantity of mucus and serum is secreted to protect the coats of the stomach from the poisonous or medicinal agent; but the stomach does not suffer alone; the alarm is communicated to other organs, to all parts of the system; and this transference of increased vital action, this disturbance of the organism, this commotion of the body, is regarded by the doctors as a tonic effect! How worth deceiver!

If but a few of these "tonic" impressions are made on the stomach, if only a few doses are taken, the vital powers, after enduring the siege, and defending themselves as well as may be, subside into their accustomed quiet, and the excitement, being not very great, is a

specially suited. But if these tonic impressions are kept up a long time, if the medicines be long continued, the vital expenditure is so great that the doctors will the evidence of its less ability; and well they may. The organic instincts are finally wearied out, they become torpid, and refuse longer to respond to the impression; the life ceases to be troublesome. Now it is that the doctor, who wishes to still keep up a tonic impression, who desires to *strengthen the system yet a little more*, brings a new recruit into the field. He administers another tonic; no matter what, if it be a different one. It works like a charm! The vital powers, though jaded and half-paired, are not yet dead. A new energy well starts them again; an unaccustomed impression will again arouse them to resistance. If the first tonic was removed, the system may be anemic, or vice versa. After the second tonic has spent its force, or, rather, after the vital powers come to resist, a third may be brought to bear; and so on, as long as the powers of the patient or perseverance of the practitioner can endure. Thus do tonics continually strengthen the patient, and leave him weaker in the end.

A decisive evidence of the corporeity of this explanation is found in the fact, that every drug under heaven can be made to operate as a tonic. Mercury, lead, stramonium, cod-liver oil, ipecac, gamboge, aqua fortis, or powdered glass—as incongruous a twofold as can be conceived—will produce tonic effects, provided the dose is such as not to occasion any decisive evacuation or corrosive operation, by which the article is suddenly evacuated, or the structure altered. Cod-liver oil and ipecac have both had their day of reputation for improving digestion, or fattening the body. Why? Because when taken into the stomach, that organ being the point of attack, the vital powers are disproportionately directed to that organ in defence; and if the doses are frequently repeated, a determination of nervous or vital energy is established toward the digestive function. The digestive organs may thus be temporarily invigorated at the expense of all the rest of the body—a double-bought method of promoting digestion and fattening the body, in the end.

But why do some poisons or medicines produce sweating, others sweating, others purging, etc. Simply because they are, by means of these violent or increased efforts of the excretory functions, got rid of. It is a law of the animal economy, that all injurious agents which gain admission, in either form, within the domain of vitality, are counteracted, neutralized, or expelled in such manner as will produce the least injury or disturbance to the system. If a very large dose of ipecac, for example, is administered, so large as to prove immediately dangerous to life, or seriously destructive to the structural or functional integrity of the stomach, its action will not with such violence of rean-

used as to produce severe spasmodic contractions of the muscular fibres of the stomach and the abdominal muscles, by which the ordinary peristaltic motion of the alimentary canal is reversed, and vomiting results. If the dose be smaller, a profuse watery secretion is poured out upon it from the mucous and living membrane of the stomach and bowels, to dilute it, and render its presence less harmful, while it is conducted along the alimentary canal by the ordinary peristaltic motion, and expelled from the bowels, and thus we have a cathartic effect. If the dose be still smaller, it is largely diluted with serum, taken up by the absorbents, carried into the mass of blood, and finally thrown off by the skin, this being the manner in which a small quantity can be most easily got rid of, and thus we have a diaphoretic operation. If the dose be even yet smaller, so that no special effort of the organism is made to throw it off at either excretory, the vital powers meet, decompose, and destroy it in the stomach, for which purpose there is an increased determination of blood and of nervous influence directed to the part, and hence we have its tonic effect. Thus may a single article of the *materia medica* produce, according to the quantity administered, the various and seemingly opposite operative effects of vomiting, purging, sweating, and strengthening; while each effect is attended with an absolute waste of vital power.

It is well known, too, that all drugs lose a degree of their potency by repetition; at other words, the vital resistance is gradually overcome or worn out, so that, to produce the same operative effect, the dose must be constantly augmented. Those who find a sufficient stimulus in one glass of brandy per day, frequently find tea required in a few years to produce an equal excitement; those who smother on one cigar daily, generally end with several; and those who find at first one potent pill sufficient to move the bowels, not infrequently find twenty or thirty an inefficient dose after the vital resistance has been pretty thoroughly subdued.

When medical books, therefore, tell us that drugs lose their remedial effects by long continuance, we are to understand that vital resistance is subdued; for so long as the organic instincts are against the remedy, so long will the phenomena of resistance occur, which medical reasoners, starting from mistaken premises, call medicinal. It may be remedial and so, in a certain sense—rendering evil for evil.

If a blistering compound, which acts chemically or corrosively upon the structures, is placed upon the skin, serum is poured out, the surface is raised, a collection of water is formed as a barrier to the further approach of the adversary, the scarf-skin is sacrificed to save the true skin, and the red, torpid, inflamed blood-vessels show the violence of



this defensive struggle. It may be that the vital energies which were struggling against the cause of a deeper-seated pain are so directed to the new point of attack—the diseased surface—that the prior pain is no longer felt. The doctor calls it cured; it may be cured, and yet its cause be aggravated, and the patient only the worse for the cure.

The grand distinctive effects of homoeopathic and allopathic practice are not to be explained on the principle of "*similia similibus curantur*," nor upon the principle of "*contraria contrariis curantur*," nor upon both principles together, but upon this principle of vital resistance we are reasoning. Let us illustrate this point.

Tox, scurf, catarrh, thoroughwort, ash, rhus, milkweed, &c., are medicinally diaphoretic and diuretic; in other words, the vital powers expel them through the skin and kidneys, the expulsive effort being denoted by diaphoresis and diuresis. From improper food, vitiated air, impure water, or suppressed perspiration, the blood may be loaded with morbid matters, which the vital powers are naturally disposed to expel through these departing organs—the skin and kidneys. Now while the vital powers are making a special effort to get rid of the special cause of disease—morbid matter—let us see what happens by the special introduction of a morbid drug. Precisely this. If the drug be so used as does or not to disturb seriously the first passages, and provoke vital resistance there—that is, if it be *homoeopathic*—it passes on into the circulation, to be expelled through the skin and kidneys; thus, by adding another morbid cause to the existing one, both of which excite the vital powers to expulsive efforts through the same channels, the determination to the skin and kidneys is increased: the remedy does actually increase the remedial efforts of nature, for the simple reason that it provides a greater duty for nature to perform. When the morbid matter of the disease and the morbid matter of the drug are got rid of, we have a cure on the homoeopathic principle.

But suppose the dose to be allopathic, that is, large enough to produce a strong impression on the stomach and bowels, and excite active resistance in the first passages. Here are then two sets of vital efforts at work in different directions, at variance with and counteracting each other; one to the skin, to expel the morbid causes of the disease, and the other to the primary sensitive functions, to resist the morbid matter of the medicine. The efforts of nature being thus divided and distracted, are rendered inefficient for either duty; but if the impression of the drug be very powerful, it may produce a new disease, and drive off all the remedial efforts from the skin and kidneys to resist its action, and thus we have a cure on the allopathic principle. The determination of the skin and kidneys is weakened, and all that is required is

is recover, if possible, from the fictitious malady—the effect of the drug.

We can more readily understand how vastly superior the homoeopathic practice is, in all those cases of disease, in the simple fevers and exanthemas, wherein the efforts of nature are directed especially to the skin, and wherein they are, in almost all cases, when left to themselves, equal to the task of overcoming the difficulty. The inflammation does *not*, to any appreciable extent, hinder the progress of those remedial powers inherent in the living organism. We can account for another problem, too: the superiority of the allopathic practice in a different class of diseases, viz. obstruction of and morbid accumulation in the alimentary canal, where the strongest impetus of the allopathic does not be made in the line of direction of the remedial efforts of nature. In the case of a simple fever the allopathic does would interrupt the natural course of those remedial efforts; but in a case of constipation from retained excrementitious matters, the homoeopathic does would work adversely.

I am far from saying that, under certain circumstances, drug-medication, either homoeopathically or allopathically, may do much more good than still, though I contend that such is not the general rule; but I insist that the true healing art contemplates a method of treating disease on an entirely different basis; and a true basis, I claim, is furnished by the philosophy of the Water-Cure system, which abjures drugs, and depends wholly on hygienic influences.

There is nothing in medical experience more speciously delusive than the stimulating practice in cases of extreme prostration and debility. When a fever, for example, "burns," we completely subside, the patient is weak and relaxed; and if he has been severely drugged, he will be very weak. The doctors of all schools, except the hydropaths, are always afraid the patient will "sink," or "run down," unless kept up with brandy, wine, quinine, or some other deleterious stimulant or tonic. Hence, as soon as a fever subsides by relaxing agents, that it is produced again by exciting agents, on the almost theory of sustaining the body on mere stimulation until it can recover its balance, or in some mysterious way acquire a faculty of existing without it. This "fallacy of the faculty" has been the death of no small number of the earth's inhabitants.

It is no uncommon circumstance for a patient to be dosed with a quart of brandy, or a gallon of wine, in twenty-four hours, every swallow constituting a new organic resistance, and a further waste of vital power, and imperiling the patient's life, while the doctor is firmly impressed with the belief that the patient's health remains in his body.

only by virtue of the absolute stimulant. It is easy to account for this delirium. When the fever is up, the physician is afraid of death from its violence; but he knows the patient will not die, in ordinary cases, until the cold stage of the paroxysm becomes permanent. When the fever is down—that is, in the cold stage—the patient is pale, cool or cold, the features sunken, and the pulse low, natural consequences of the previous febrile excitement. The organism now requires rest, quiet, perhaps narcosis. But the doctor, fearing this depression will end in death, kindles up the fever again. So long as the system will respond to stimuli, so long as the vital powers will manifestly resist the worst impressions of the stimulant, the body is not absolutely death-struck, and the doctor has the satisfaction of knowing that the patient is not now dying. But this evidence of his existing vitality is the expenditure of a part of that vitality; hence, although the stimulant causes him to manifest more signs of life, it also hastens or endangers his death, for the simple reason that it causes a further waste of vitality.

But it may be objected that our theory of vital resistance, though applicable to those agents which produce excitation, or increased action of the circulating system, will not explain the phenomena produced by the narcotics, which operate in a very different manner. Let us see. Medical books tell us that opium in small doses suppresses all secretions except the cutaneous, which it promotes. What is this but the effect of the vital powers, all concentrated, as it were, to expel it through the skin? In large doses opium always creates nausea, and usually vomiting, evidence of the effort of the vital powers to expel it at once from the stomach. The pure narcotics, as belladonna, belladonna, stramonium, cicuta, prussic acid, &c., are really enemies in relation to the nervous power. Being so deadly in their influence, they are met with an energy proportioned to their potency of dose, and the shock, as it were, is often sufficient to destroy the organism in a moment, like that from a Leyden jar, or a discharged electric shock. In very small doses the pure narcotics are thrown off more or less by all the excretory organs, but more especially the skin.

In conclusion, we may find a corroborating illustration in the effects of the very Sampson of the alchymic medicine vendor—mercury. No medical books pretend to explain the *modus operandi* of this drug, but all agree that it *promotes only the secretions of the body*. It is the general effect upon all the secretions which causes mercury to be regarded as a universal alterative, and administered, too, so freely and so freely in almost all the diseases incident to humanity. But how and why does mercury provide the activity of all the secreting organs? Because

its operation is, although very slow and gradual, is classically destructive to some of the constituents of all the fluids and solids of the body: hence it is every where met with active vital resistance, either to expel it at the natural outlets, or introde it in insidious, as in its neutralizing or limes its various conspurgers while it remains in the system. Its universally remedial operation is only the evidence of universal war in the organism, the final result of which must inevitably be universal ruin, to a greater or less extent, of the vital powers.

## CHAPTER II.

### WATER-CURE PROCESSES.

THE hydropathic appliances embrace all the usual methods of vapor, warm, tepid, cool, and cold bathing, besides a variety of processes which have had their origin in the development of Water-Cure as a system.

Fig. 104.



THE WET-SHEET PACKING.

#### THE WET-SHEET PACKING.

—This process, the *Gew. Pack* of the Germans (fig. 104), is admirably calculated to answer two general indications, which are manifestly leading ones in a long catalogue of maladies, both acute and chronic, viz., to relax the heat of the body and the force of the circulation, and, as an alternative, to correct morbid and restore healthy secretions. It produces also, immediately, a powerfully detergent or cleansing effect, and generally exerts a wonderfully sedative or soothing influence on the whole nervous system. The first disagreeable sensation of cold is usually soon followed by a pleasurable warmth over the whole surface. It is capable of superseding, to advantage, bleeding, nisturey, salts, hydriodate of potash (iodide of potassium), calomel, and opium, and a hundred other more or less injurious agents.

ing influence on the whole nervous system. The first disagreeable sensation of cold is usually soon followed by a pleasurable warmth over the whole surface. It is capable of superseding, to advantage, bleeding, nisturey, salts, hydriodate of potash (iodide of potassium), calomel, and opium, and a hundred other more or less injurious agents.



In fevers, and in all acute inflammatory disorders, it may be employed with a freedom exactly proportioned to the degree of morbid heat and force of the pulse; that is, continued, with frequent changes, until the temperature and circulation are reduced to the natural standard, and the skin becomes cool and perspirable. Much sweating is not usually to be desired.

In nearly the whole range of chronic complaints, there is one prevalent morbid condition, ever varying in intensity, yet existing essentially in a deficiency of blood in the superficial and capillary vessels, and an accumulation or engorgement in the large internal vessels, with consequent congestion in some one or more of the viscera. To reverse this condition, relieve the overburdened internal organs, and supply the deficient external circulation, the wet-sheet process, aided by the proper auxiliaries, is the best known remedial agent.

Dr. Gully well remarks: "This process repeated day after day, and sometimes twice daily, at length fires a quantity of blood to the blood-vessels of the entire skin, and thereby induces the disproportionate quantity which was congested in the inner skin, or various viscera."

If any one doubts the purifying efficacy of this process, he can have a "*demonstration strong*" by the following experiment: Take any man in apparently fair health, who is not accustomed to daily bathing, who lives at a "*first-class hotel*," where they fatten their own chickens and pigs on the refuse matter of the kitchen, takes a bottle of wine at dinner, a glass of brandy and water occasionally, and smokes from three to six cigars per day. Put him in the "*pack*" and let him "*soak*" one hour or two; on taking him out, the insupportable stench will convince all persons who may be present that his blood and secretions were exceedingly befouled, and that a process of depuration is going on rapidly.

The time for remaining "*packed*" varies greatly in different cases. The average time is from thirty to sixty minutes, though in some fifteen minutes is long enough, while others may remain enveloped two hours to advantage. Persons of highly nervous temperament, and rapid though feeble pulse, and those labouring under great debility with considerable irritability, should remain in the wet sheet only until the body becomes comfortably warm. Those having a more torpid circulation and phlegmatic temperament, untroubled with much debility, may remain a much longer time.

Much of the comfort or disagreeableness of the process depends on the skill and dexterity of the attendant. There is at least as much science in applying wet clothes to the naked body as in rubbing in an

skirtment or putting on a shirt. A person may be wrapped up so closely, loosely, and unevenly by an awkward hand, as to find the whole affair from beginning to end exceedingly uncomfortable; or the clothing may be so rapidly and nicely adjusted, as to give the patient as much as is of actual enjoyment.

Light cotton, hair, or sea-grass mattresses, or even straw, for those accustomed to very hard beds, may be used for "padding." On one of these spread from three to five large thick comfortables, then a pair of soft flannel blankets, and, lastly, the wet sheet lightly wrung out, so as not to drip. Two pillows placed on the mattress are necessary for the head. The patient, lying down flat on the back, is quickly enveloped in the sheet, followed by the blankets and comfortables. A light feather bed may be thrown over the top, in which case two comfortables less will be required. If the feet remain cold, bottles of hot water should be placed in them. Headache is prevented or removed by the application of cold wet cloths. In wrapping up the patient, great care should be taken to turn the clothing snugly and smoothly around the feet and neck. For very delicate persons, the sheet should at first be wrung out of tepid, or even warm water. On coming out of the "pack," the plunge, douche, rubbing wet-sheet, or towel washing may be employed, as either is speedily indicated.

Some hydropathists recommend the sheet to be wrung as dry as possible, and others advise it to be used quite wet. I prefer a very wet sheet in all cases wherein the patient is not deficient in external heat. When the skin is very cold and torpid I would advise it to be as dry as the attendant can conveniently wring it.

Some persons, whose pores are pretty effectually closed up with miasmatic accumulations, find it rather difficult to get entirely warm at first. In a few days, however, the glow comes up readily, and it ceases to be dreaded. Such cases are benefited by a good deal of friction to the skin over the wet, and then the dry sheet.

There are many feeble patients, of weak vital energies and extreme susceptibility, who very soon get warm in the wet sheet, and immediately after grow chilly again; and in some cases, if they remain yet half an hour longer, a comfortable reaction will come on again. Such persons should be taken out, if possible, during the glow upon the surface. If it so happens that they get an unpleasant chill after coming out, a thorough rubbing, followed by fifteen or twenty minutes dry packing, will usually obviate all ignominious consequences.

Headache, hunger, muscular debility, and sickness, if serious and long continued, generally indicate that the envelop has been continued too long. When they occur repeatedly the time should be shortened,

A linen is always to be preferred for "packing," even especially in warm weather.

The wet sheet is not a sweating process as generally supposed, although frequently a moderate, and occasionally a copious perspiration takes place. It is permanently either a cooling or a heating process, according to the degree of envelopment. When the object is to reduce fever or inflammation, the patient should be lightly covered, and the wet sheet frequently renewed. In chronic diseases, when the intention is to produce reaction and develop the external circulation, an additional quantity of bedding secures this object. As a cooling process, it may always with safety be frequently repeated, until the force of the pulse and the prostrated heat are reduced to the normal standard. Under its judicious employment in chronic diseases, the skin gradually becomes softer, velvety, and more porous and delicate; its structure more firm, and its functions more vigorous.

**THE HALF-PACK SHEET.**—This is the application of the wet sheet as above to the trunk of the body only. It is milder, yet has efficacious, than the full pack. It is only employed on feeble persons, who have not sufficient vitality for the whole sheet, or as a preparatory measure for the entire envelopment.

**THE DRY-CURE.**—The primary object of the douche (shower) bath, *Fig. 105*, is to arouse the activity of the muscular system, and this it certainly accomplishes in a most powerful and efficient manner. It is well adapted to chronic enlargement of the sinews, tension, stiffness, and stiffness of the joints, local attacks of gout and rheumatism, chronic constipation, the incipient stage of tubercular consumption, and many other disorders. The force of the stream and time of application should be carefully adapted to the strength of the patient. Very nervous persons, and those subject to a laceration in the brain, must resort to it with extreme caution. Generally the stream should be directed to the back of the neck, along the spine, hips, and shoulders; in chronic swellings of the joints the stream may be directed to the affected

FIG. 105



THE DRY-CURE

parts; in cases of torpid bowels a moderate stream may be applied to the external abdominal muscles. No strong douche should ever be taken on the head, nor should it be long continued on any one spot about the spine or back bone.

Douches may be so constructed as to produce any degree of inspiration, from that which is scarcely appreciable, to one as powerful as the vascular system *vis a vis* itself, according to the size of the stream, its fall, pressure, &c. They may be vertical, oblique, horizontal, or *enversing*. Those most generally used are perpendicular streams from one to two inches in diameter. Smaller streams, as inch and half inch are better in some cases. The oblique and horizontal streams can be more conveniently applied locally when indicated, and in many cases, as in difficult respiration, it is advantageous to have the body position erect during its application. The ascending douche is particularly valuable in piles, prolapsus of the uterus or bowels, constipation from debility, &c. The stream should not be forcible enough to cause absolute pain nor serious inconvenience; the stream may be half an inch to an inch.

Warm water douches have been employed but little comparatively, but I think they are destined to grow in favor. In many cases of rigidity of the muscles, painful swellings, chronic inflammation of the joints, in neuritic affections attended with extreme nervous irritability, and in spasmic and hemic cases I have known excellent effects from streams of warm water applied to the parts affected. They are also useful in obstinate constipation, retention of urine, emmenorrhoea, &c. As the object of a warm douche is to relax instead of stimulating the muscles of the affected part, a small stream long continued is the best; it should be followed by the cold duck for a moment.

The *huc-bath* is a modification of the douche; it may be employed horizontally or obliquely to any part of the body, the force being regulated by a stop-cock.

**The Russian Wet-Bath.**—This bath produces a strong and general determination to the whole surface. The shock is generally rapidly succeeded by vigorous reaction, which is further promoted and maintained by active friction. It is applicable in all cases wherein a strong diversion from the internal viscera, or the general tenderness of the alimentary canal to the skin, is required. It is more or less serviceable in nearly every condition of disease wherein the patient has sufficient reactive energy to prevent a permanent chill. In the primary stage of fevers, in the early stages of local complaints, cold, diarrhea, dysentery, cholera, &c., it is particularly valuable. In those



cases it should be applied frequently for a few minutes, and the skin rubbed energetically and perseveringly. In the great majority of skin diseases it is among the best resources of hydrotherapy. It is one of the best kind of "wash-dress" to follow the pack.

The rubbing wet-sheet is an admirable bath for the sedentary and studious; for exhaustion consequent on severe mental exertion; for mental disorders, and many states of insanity; for nearly all spasmodic and epileptic conditions; for delicate females; for night sweats, watchfulness, nightmare, etc.

When employed dripping wet (the crapping sheet), a large tub or dipping pan is necessary for the patient to stand in. When wrung so as not to drip it may be used in any room or on a carpeted floor. The sheet is thrown suddenly around the patient's body, which it closely envelops from the neck to the feet, and the body is rubbed by the hands of the attendant while the sheet; in ordinary cases ten minutes are sufficient. Some prefer a larger sheet thrown over the head and reaching down to the feet, by which the patient can himself exercise by rubbing in front while the attendant rubs the back part of the body. I do not see any special advantage in this so often in awkwardness. The patient can and should make active friction over the chest, abdomen, and lower extremities, if the sheet is thrown around the neck, leaving the head wet. It is succeeded by the dry rubbing sheet, or rubbing with dry towels.

**THE SITTING-BATH.**—The sitting-bath answers the several indications of tonic, derivative, and sedative. It is invaluable in weakness, irregularity, obstruction, and torpor of the lower organs of the pelvis and abdomen. Any common wash-tub will answer for its administration, though it is more convenient to have round made for the purpose, the bottom round a few inches from the floor, the back side raised to rest against. The outer, as a general rule, should cover the hips and lower portion of the abdomen. It may be of any temperature, from very warm to extreme cold according to the case; and the time of application varies from five to thirty minutes. The cool and cold sitting-

FIG. 100.



THE SITTING-BATH.

baths are for the most frequently indicated, and the usual time is from ten to fifteen minutes.

In the cold stage of fever, the warm sitz-bath very much mitigates the severity of the chill, and if followed by the cold-rubbing wet sheet when the hot stage of the paroxysm supervenes, will often break up the attack in a few hours. In acute inflammations of the liver, stomach, bowels, spleen, and kidneys, hip-baths should be used very frequently, conjoined with the plentiful use of tepid or cool water in injections. Debility of the external muscles of the abdomen, caused by the excessive use of tea and coffee, or crooked positions of the body, remedied by short breath, weakness is the result of the lack, and trembling of the knees, is greatly benefited by this process, used as cold as can well be borne. A blanket is usually thrown around the patient during this bath.

The best local effect of hip-baths is secured by having them of short duration—five to fifteen minutes—and frequently repeated.

A derivative effect is obtained by longer baths—fifteen to thirty minutes—and at greater intervals. It must be noticed, however, that the effect of any bath is determined as much by the condition of the patient as the length of the bath. Tonic hip-baths are more or less derivative; but to get the greatest derivative effect, the bath should be continued as long as reaction is vigorous, but not carried to the extent of producing the second chill; if so, determination may take place in the internal organs instead of deriving from them. Derivative hip-baths should not be carried to the point of producing pallor or lividness of the lips, general shivering of the whole body, ice menses at the stomach, for they would thus enlarge congestion of the brain or lungs. In treating affections of the head and chest, for which this bath is one of our best resources, great caution should be exercised in managing them so as to secure a derivative without producing a reverse effect.

Some of the effects of sitting-baths, usually called derivative, are purely relative; so rather, though, so long as they work sensitively. In a general fever, for example, when the whole body is perversely hot and torpid, a long-continued bath of this kind operates as a refreshing and fever-removing sedative.

The temperature of the water, and its quantity, also have some influence in determining whether its effects shall be tonic, derivative, sedative, or repellent. The rule of practice, is to lower the quantity of water, as raise its temperature, according to the salience, torpor, and debility of the patient.

FIG. 147.



THE SHALLOW-BATH.

**THE SHALLOW-BATH.**—This is usually employed in a powerfully stimulant, mildly diaphoretic, and moderately sedative bath. It is sometimes used cool, seldom very cold, but generally tepid, from 65° to 75°. The common shallow-bath tub may be used, but a circular or oval tub, raised about twelve inches from the floor, is more convenient for the attendant. In private families any tub large enough for the patient to sit upright will answer. The water should be from four to six inches deep. During the bath the shoulders and lower part of the body should be well rubbed by the patient if able; if not, by an attendant; while the head is sprinkled and the back and chest rubbed by the attendant, who sprinkles those parts, or dips his hands occasionally in water. When there is no shivering, a pail of cold water (the pail double) should be poured on the chest and shoulders to complete the process. This bath may be employed from one to fifteen minutes with those who are very feeble and sensitive to cold, and from fifteen to thirty minutes with others. It is usually followed by the dry rub-dress; sometimes also by the hand rubbing. When used for a long time, the water is renewed as often as it becomes quite warm.

Many nervous and delicate females will find this the best bath to follow the warm-dress pack. It is also one of the best heating baths in the treatment of cutaneous affections, in rheumatic diseases, in mercurial affections of the joints, in sick headache and "rush of blood to the head," in apoplectic, epileptic, puerperal, and hysterical affections, in "sun-stroke," intoxication, delirious tremors, etc.

In some instances the half-bath has been continued for several hours with decided benefit. When there is stiffness and prostration of heat of the surface, in any of the above-named diseases, it may be protracted as long as these symptoms can hold out, with perfect safety; but in all other cases short baths when repeated are preferable to very long ones; the former are never dangerous, the latter possibly may be.

**THE HALF-BATH.**—The half and shower-baths are often spoken of as the same. Some authors make a distinction by calling the ordinary shallow-bath a half-bath, when the water is about one foot in

depth, so as to cover the lower part of the abdomen, as well as the lower extremities. This is an effect intermediate between the shallow-bath and full-bath, or plunge, and is employed when the reactive power of the patient admits of a stronger impression than the former, yet it is not sufficient for the shock of the latter. It is especially adapted to those cases for which the shallow-bath is indicated, when they are complicated with great weakness of the external abdominal muscles, deficient action of the kidneys, obstruction of the liver, leucorrhœa, hæmorrhœgia, &c. In relation to time and temperature, it is to be regulated by the same rules as the shallow-bath.

Dr. Johnson (*Domestic Hydropathy*) says, in allusion to this bath:—“Place me under the most unfavorable circumstances, viz., in the heart of a large town, let me have my fair average of all sorts of cases, new and old, acute and chronic, slight and severe, and give me the shallow-bath, the sitz, and the wet-sheet, and no other bath whatever, and let me have no opportunity of frequently seeing my patients—I would undertake to cure or relieve more cases than are now cured or relieved by the ordinary drug-treatment in the proportion of two to one.” I think the doctor is safe enough. It would not become me to speak for London practice, but as for drug practice in New York, I would confidently undertake the same task with either one of these three baths, or with a pint of pure soft water and a crash towel, without either of them.

FIG. 108.



DIPPING FROM BACK IN PLUNGE.

**THE PLUNGE-BATH.**—Immersing the whole body up to the neck quickly, when the patient has room and opportunity to exercise his limbs under water, is all that is essential to the full benefit of this process. It is generally preferred after the sweating process, and very frequently after the wet sheet, by those who are able to bear the exertion. The patient wears the wrapping-sheet and blanket (fig. 105) to the bath, leaving his feet sufficiently released

to walk, and as a useful precaution, puts the head and chest, and then plunges into the water, either head-first or feet-first, as he desires. The shock produced is much less than most persons could suspect, while the reaction

is more rapid and powerful than is generally supposed. The shock produced is much less than most persons could suspect, while the reaction



is generally rapid, equal, and extremely agreeable. It may be advantageously employed more or less in the majority of all chronic diseases which are not attended with strong determination to the brain, great disturbance of the circulation, or difficulty of respiration. It is one of the most pleasant and refreshing morning baths taken on first rising from bed; and by all, except the very feeble, it may be employed unless this any other bath can be, with equal comfort.

Invalids with lungs so tuberculated as to prevent a full inflation, do not bear the plunge well, nor persons laboring under organic affections of the heart, nor those laboring under dropped transmissions of the chest or midribs; in these cases it disturbs the circulation and respiration too much. But with all invalids as other persons who have moderate rigors and a pretty well-balanced circulation, with no serious local determinations or organic lesions, there can be no more agreeable or exhilarating bath.

A plunge-bath may be easily constructed wherever there is a running stream. A square plank box, four or five feet in depth, makes a good and cheap one; its dimensions may be large enough for a swimming-bath to advantage, if there is room.

The temperature of the plunge is usually from 50° to 65°, and the time for remaining in the bath varies from a very few seconds to two or three minutes, in chronic diseases; in high fever or general inflammation of the whole system, the patient may remain but a few minutes—at all events, until thoroughly cooled.

THE FOOT-BATH.—Most persons are aware of the intimate connection between the whole nervous system and the feet, manifested by the extraordinary susceptibility of the sides of the feet to external impressions; and such persons must readily appreciate the importance of this remedial application. The potency of mustard, onions, garlic, vinegar, ginger, pepper, and other pungents, applied to the feet, is a variety of aches, pains, cramps, and spasms, has long been celebrated among physicians and nurses. The intelligent hydropath will admit the importance of the principle—*sympathy*—upon which the employment of these articles has been based, while he will produce every desirable result of them all with simple water. As a derivative in affections of the head and chest, it is often used in connection with the sitz-bath, with which it may be advantageously alternated. To prevent or remedy habitual cold feet, it is absolutely indispensable in a hydropathic course. Active exercise, in this case, should generally precede and follow the cold foot-bath. The rules given for the regulation of the sitz-bath will apply to this. Any vessel large enough to admit the feet

and water enough to cover them ankle deep, will answer. The time is usually from ten to fifteen minutes.

Persons of very feeble constitution, and who are unable to take much exercise, should use shallow foot-baths for about five minutes, the water being not more than one or two inches deep. The feet or toes, or both, should be kept in motion during the bath. Washing foot-baths, where a stream of cool water can be fixed with a clean bottom, is a most efficient remedy for habitual cold feet, and one of the best applications for chronic headache, rheumatism, sleeplessness, and also one of the most excellent and efficient strengthening processes for almost all forms of female weakness and obstructions.

The warm foot-bath is often valuable to relieve sudden attacks of headache, and soothe the nervous system when acutely irritated. Many delicate invalids who are habitually liable to cold feet, will find the wet-sheet pack more pleasant and agreeable by putting the feet in warm water for three minutes before being enveloped.

FIG. 100.



THE HEAD-BATH.

**THE HEAD-BATH.**—The common method of bathing the head is by folds of wet cloth, or a stream of water poured over the head. In all acute diseases about the head, attended with pain and increased temperature, these processes are sufficient, but in some chronic affections a powerful derivative or a sedative effect is desired. For this purpose the patient lies extended on a rug or mattress (fig. 100); the head resting in a shallow basin or kept holding two or three inches of water, the shoulders being supported by a pillow.

It may be administered from fifteen to thirty minutes.

When the pouring head-bath is employed the patient lies face downward; the head is held by the attendant and projecting over the side of the bed; the bedding being protected by a sheet or blanket drawn around the patient's neck; a tub is placed under the head to catch the water. The water is poured from a pitcher or other convenient vessel moderately but steadily for several minutes, or until the head is well cooled, the stream being applied principally to the temples and back part of the head. This process is excellent in all high fevers, and in the early stages of cold and chicken pox.

Fig. 124 represents a convenient vessel for a head-bath. Length from  $a$  to  $b$ , 11 inches; breadth from  $c$  to  $d$ , 8 inches; depth, 2½ inches; height from the base, 7 inches. The bottom is convex.

The cold cloth, or pouring stream, is beneficially employed in convulsions, delirious tremors, rheumatic affections of the head, transferred pect., epilepsy, apoplexy, nose bleed, inflammation of the brain, etc.

In chronic diseases of the eyes and ears, complete, partial or complete loss of hearing from debility of the auditory nerves, dizziness of vision from local debility, morbid deposit in the lacrymæ or sinusses of the eye, chronic otitis, etc., the bathing vessel is *absolutely* given.



VESSEL FOR THE HEAD-BATH.

**THE SHOWER-BATH.**—This bath is greatly esteemed by many persons, and is generally well recommended by sympathetic physicians. Cases like the following are everyday affairs in New York: A patient has been under drug-treatment a long time without benefit; he has been entirely unsuccessful in regular bathing in any manner, and has never taken a cold bath, nor has the doctor even hinted at any sort of a bath during his whole course of medication. Fort, getting discouraged, the patient begins to annoy his medical adviser with questions about the Water-Cure; the latter speaks in the highest terms of the remedial use of water in the hands of competent persons; thinks it is a very good remedy indeed in every case, but in this particular case it probably would not answer; it might produce congestion. Still the patient says, if disposed, try it and see—that is, on his own responsibility. He may try a shower-bath, and experience thereby how the treatment will be likely to operate. Influenced by these home considerations, and without any prescription or regulation, the patient takes two, three, or half a dozen shower-baths. Each one gives him a disagreeable chill, produces a violent headache, and makes him feel decidedly worse in every sense. He goes back to the doctor, who shakes his head portentously, looks "wonderous wroth out of all his eyes," and exclaims, "I was afraid it wouldn't work well; cold water is a very powerful agent; very dangerous when not properly managed."

Now the shower-bath is excellent in its place, but in almost all cases it is the very worst bath to commence on an invalid with. Generally patients require considerable preparatory treatment before they can

take it to advantage. Although it is more frequently prescribed than any other bath by the drug doctor, the hydroquith would sooner dispute with it entirely than with any other.

The shower-bath can be employed probably only by those who have a good degree of vital heat, and a rather active and pretty well balanced circulation. It is contraindicated in very nervous and extremely susceptible persons, in those liable to nervous headache, palpitation of the heart, great determination to the lungs, or severely emaciated limbs.

Whether it should ever be taken on the head is a controverted proposition. Many persons, to my certain knowledge, have taken it freely on the head as well as all over the body, as a daily bath, for years, not only without any unpleasant symptoms, but with unusual pleasure and advantage. But I have known many instances with whom it would occasion more or less headache or giddiness, when applied to the head, and none whatever when only taken upon the rest of the body. The safest general rule is to direct patients to incline the head forward so as to let the shock fall upon the neck, spine, and shoulders. It may also be freely applied to the chest and abdomen.

Its principal advantage is in affording a convenient morning bath; a good wash-down after the wet sheet, when no other bath is specially indicated, and also after the hot and vapor baths.

In the course of drunkenness a smart shower of cold water often restores sensibility very promptly. The cold shower has recently been introduced into the penal institutions of our criminal code. Refractory culprits are often brought to prompt obedience by its terrors. The prisoners are said to dread it more than the old-fashioned, barbarous methods of flogging. It is certainly more humane, but is liable to do injury in those who are extremely susceptible, with a tendency to head affections.

This bath has long enjoyed considerable repute as a popular remedy for rashes and other exanthematic affections of children. It is managed so judiciously in home practice as to work more mischief than benefit, as the following anecdote will illustrate. I once saw what was intended for a shower-bath, administered in this fashion: a good mother became anxious about her little boy, who was about a year and a half old; he appeared to be "poorly," without having any particular disease for which a nurse could be found. The doctor gave it oil, rhubarb, "a touch of calomel," castor drops, worm seed, and strengthening things in abundance, but it stayed "poorly." Some kind neighbor advised showering, and the mother concluded to try it. The next morning, which happened to be of a warm, blustering, November day, the



mother, at early sunrise, drew a pailful of water from the bottom of a deep well, stripped the child naked, placed it out-door on the bare cold ground, and then threw the pail-douche over it at a single dash! The result was a fever, which lasted the child a week. The child should have been placed in a tub in-door, and the water poured over it gently.

**THE CATARACT-BATH.**—This is a pleasant yet powerfully excitant bath. Dr. Johnson, from whose work I take the illustration cut, thus describes it:

In Fig. 771 a and b are two tall cylinders, containing six or eight gallons each. These are fixed at the top of the frame-work of an ordinary shower-bath; the common system and perforated plate being removed. By pulling a string, these cylinders are filled so as to discharge their water, as it were, in the plane. The inner side of each cylinder should have a lip, to give a more forward direction to the current of water.



FIG. 771. CATARACT-BATH.

The cataract bath may be employed for the same general purposes as the douche. It is a good substitute for the shower-bath, and for the plunge in those who cannot bear the exertion required by the latter.

**THE DRY PACK, OR SWEATING-BATH.**—Wrapping in the dry blanket is managed precisely as the wet-sheet packing, with the omission of the wet sheet. The flannel blanket comes in contact with the body, and a sufficient quantity of blankets, comfortables, or other bedding is thrown around to retain the natural heat. Very nervous and irritable persons should not be wrapped very tightly about the chest. A wet napkin should always be applied to the head, and the room should be well ventilated. The sweating process usually occupies two or three hours. Some few persons will perspire freely in less than an hour, and some will remain four or five hours without sweating much.

When the pulse is feeble, perspiring with difficulty, exercising by extending the limbs forcibly, accompanied with deep, full inspirations, will very much accelerate the process. One, two, or three tumblerfuls of water are taken at intervals during the envelopment. Dr. Johnson recommends a little sibiquesti auxiliary in the shape of "a pint of hot, weak,

black tea?" I would recommend the patient to abstain, totally, from all such noxiousness.

The patient should never remain long enveloped after sweating has become copious; it is much better to perspire moderately and frequently. On coming out of the sweating-blanket, some form of cool or cold bath should be taken, as the plunge, douche, shower, shallow-bath, or dripping-sheet. The sweating process is one of the severest of the Water-Cure appliances, and must always be managed with care and discrimination. If the patient becomes very restless, or if troublesome headache, giddiness, or palpitation come on, he should be taken out. Patients will usually bear this application better after a few repetitions.

Many people suppose, and some medical writers represent—among whom is Dr. John Bell, in his able work on Medical and Dietetical Hygiene—that the sweating process is a regular part of the hydropathic warfare. This is a great mistake; sweating is not the rule, but the exception in water-treatment. It is very seldom resorted to in any respectable establishment, and Proudhon recommends it now much less frequently than formerly. It is the nearest approach to allopathic treatment of any of our processes, being, when long continued, depletive and debilitating.

The sweating process is not applicable to any particular disease by name, but to a particular condition of body which is found in several diseases. This condition is called *pythoria* in medical books; it means over-fullness, grossness of the system. It is most frequently found in gouty and rheumatic subjects. All very fat or corpulent persons possess it, of course. It is the result of high living and indolence, or of active amusements combined with defective depuration. Persons afflicted with that unsightly disorder, *acidity*, can be assisted down to the standard of mental calm and personal usefulness by this manner of sweating, providing the alimentary supplies are also healthfully regulated.

The dry-blanket packing is very useful for those invalids who are too feeble to exercise sufficiently to overcome the chill produced by the wet-sheet pack, or other cold applications. With such, too, wrapping for half an hour to an hour is a good preparatory measure for other baths, and it may follow any bath when desirable to thus sustain reaction.

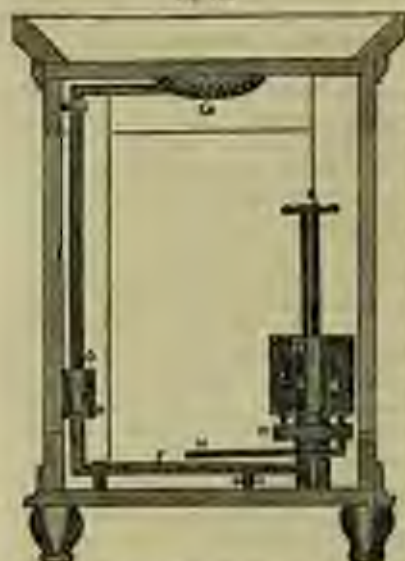
There is another class of invalids still who may find benefit from the dry packing; those who suffer occasionally, and at irregular intervals, severe rigors or chills, proceeding from enlarged liver or spleen, or slight abscesses or tuberculosis of the lungs. Though it will not prevent the chills, it will materially mitigate their severity, and thus

indirectly make the task removal of the cause. For this purpose the patient may be enveloped at any time when the chills trouble him, and remain until comfortably warm and fatigued with the position.

**THE VAPOR-BATH.**—Something akin to the sweating-bath is the vapor-bath. Some hydropathic practitioners regard the vapor, and shower, and all other modes of water-treatment which were not prescribed by Prussnitz, as anti-hydropathic, as though nothing was ever to be learned save what Prussnitz personally taught, and nothing ever to be done save a positive repetition of his acts. Between the vapor-bath and sweating-bath there is a difference in favor of the latter. It does not disturb the circulation, quicken the pulse, or affect the respiration as much as does the vapor-bath, nor is it so liable to abuse from ignorance or carelessness. This last objection, however, applies rather to the usual than the necessary result of the vapor-bath; for, if not made too hot, nor administered too long, the effect is merely ever disagreeable. It is better adapted to rapid, phlogistic exanthemata, than to the nervous or irritable, other circumstances being equal. It is valuable—yet not equal to the usefulness—in many forms of skin-diseases untended with much irritation. In sudden colds, coughs from suppressed perspiration, in the incipient stage of most forms of rheumatism, in the first access of simple fevers, in influenza, and in muscular diseases, it is more especially serviceable. It should never be continued to the point of producing dizziness, faintness, nausea, nor great lassitude. Some form of cold-bath should always succeed it, as the shower or plunge. The average time for remaining in a vapor-bath, when the steam is as hot as can be borne without discomfort, is from fifteen to twenty-five minutes.

The "steam doctors" have brought vapor-bathing into unwarred dispute by stretching it. Many patients have been "steamed" so long as to produce a degree of muscular relaxation and vital exhaustion, not fully recovered from in years. The process is, in their hands, usually accompanied with hot and stimulating drinks, "respiration," "No. 6," etc., and frequently followed by a *laxative emetic*; all together making a potter of medication which only very robust persons can endure without serious injury. Another error in the steam practice consists in not employing a sufficient amount of cold water after the hot vapor. Generally the patient, when excessively heated, is dismissed with a mere sprinkling of a pint or quart of cold water, when he should have a dipping sheet, plunge, or half-bath. A vapor-bath can be continued in many ways. The invention of Mr. Jeremiah Knox, of Hingham, Vt., revolutionized many conveniences in any plan I have seen.

Fig. 126

COLD SHOWER, WARM SHOWER, AND PATIENT-  
BATH CHAMBER.

red near the top of the vessel, C, and it has holes at its lower end to let the vapor escape into the chamber. When used for a vapor bath, the patient should be reclining, and the inside tube in the vessel, C, closed up, when the steam will generate the steam in a short time. The top of the vessel, C, or the tube, E, is made of a funnel shape, as represented by H, to allow the water to be easily poured in. I is a funnel to drain off the water and may be in the pipe, and there is an attachment to the inside of the vessel, O, to lift the valve, H, to drain off the water above.

Hot stones or bricks may be used to generate vapor. The patient may sit naked on an open-work chair, with a couple of blankets placed around the neck; a small tub or a common tin pot, holding a quart of water, is placed under the chair, and red-hot bricks or stones occasionally put into the vessel, so as to keep the vapor constantly rising from the surface of the water.

Another very simple plan is this: Purchase a tin boiler of one or two gallons measure, with a tin pipe having two or three joints and a single elbow. The boiler may be heated on any ordinary fireplace or furnace; the pipe can be conducted under a chair or box on which the patient may sit, covered with blankets from the neck downward. The vapor

Fig. 127 is an inside elevation of Mr. Emerson's bath, showing the arrangement by which a person can take a cold or warm shower, or a vapor bath at pleasure. The outside casing is two feet of the bath, which may hold strong sides, like the common kind; and the sides below, as they are small, and lying in the bath the end, F, may rise above the front, and be of an immovable. It is a small chamber made of water surrounding the vessel, C, some in section, and communicating with it by a small opening inside, near the bottom. When the vessel, C, is nearly filled, the vessel, as chamber, U, contains water to the same height. F is a conducting pipe extending up into the tank, E, and at the bottom of a piston, which extends down into E, having its lower end made to force the water up through the pipe, F, past the valve, H, into the shower vessel, U. This gives a cold shower bath. To make a warm bath, it is a lamp placed under the vessel, E, which heats the water, when it may be turned up as in the cold shower.

To make a vapor bath, the pipe, M, next partly in section, is attached



or steam may be increased or diminished by regulating the position of the boiler over the fire.

The sweating-crate (fig. 172) is a convenient apparatus for such occasions as are obliged to keep the bed.



FIG. 172. SWEATING-CRATE.

FIG. 172 is a drawing of the perspiration, or sweating-crate. *a* is a tin or copper lead funnel-shaped chimney, with a door which is now standing open. The small end of this chimney is open. The large end below has a tin bottom, with a hole in it to receive the little upright tin chimney, *b*; *c* is the wooden bottom on end of the grate, with a hole in it to receive the small end of the chimney, like mouth to the nostrils, but really; *d d d d* are hoops of wire or wood; *e* is a long narrow piece of wood, into which the ends of the hoops are inserted; *f* is a similar piece of wood running along the top, and perforated by the hoops.

When the crate is to be used, the clothes are to be taken off the bed, and the patient is to lie down on his back, with his head on the pillow. The crate is then to be placed over him as high as his throat, the wooden bottom being at the foot of the bed, even with the footboard. It is now to be covered with the whole of the bedclothes, and he will stand blanket-warm. The clothes are to be neatly tucked in every where, so as not to let out the heat at any point. But they must not hang down over the wooden bottom, and the feet of the patient of the bed must be tucked up out of the way. The chimney must be kept clear of all clothes. Every thing being now thus nicely prepared, the tin chimney, *b*, is to be filled three-quarters full with alcohol, and the spirit is to be set on fire. Then, taking hold of the long, straight handle of the chimney, *a*, is to be carefully let down through the hole in the bottom of the chimney, and the door closed.

**THE WAVE-BATH.**—This process consists merely in extending the body at length in a swift current of water, the patient holding on to a rope, or some other contrivance, to enable him to keep his position. It helps to make an amazing variety in the watery part of our medical studies, but has no other advantage not obtainable by the douche and plunge.

**THE RIVER-BATH.**—This amounts practically to an out-door, cold,

or tepid plunge-bath, according to the temperature of the water. Invalids should not, as a general rule, bathe in the rivers more than from ten to twenty minutes, when the water is tepid; at all events they should avoid great fatigue and the second chill. When the water is cold the time must be correspondingly diminished.

**THE RAIN-BATH.**—At some of the water-cures, patients have amused themselves with rain-water bathing whenever the propitious clouds have furnished the requisite shower. For those who are able to walk rapidly a mile or two, a rain-bath is excellent. The constant evaporation from the surface and the active exercise effect a rapid “change of surface;” and the process seems to combine the virtues of the wet-sheet pack and the dripping sheet in an efficacious manner. It is scarcely necessary to add that the patient should be dressed in light, thin clothes during the walk, and on returning to his room he will rubbed with the dry sheet, and keep up moderate exercise for half an hour or so after dressing.

**FOUNTAIN OR SPRAY-BATH.**—This is a modification of the shower or douche-bath, or rather a combination of both. It consists of a number of weak streams (flowed off liberally, and diverging as they recede from the fountain). It makes a pleasant and very excellent application to the chest and abdomen, in affections of the viscera of those cavities, when the stronger impression of the douche cannot be borne, or is not intended. Dyspepsia and constipation can generally employ it more or less to advantage. It is a good process in pleurisy, or pain in the side, in hæmaturia and hæmaturia, and in partial palsy or extreme debility of the muscles of any part. Applied to the pelvic region, it is well adapted to excite functional action in morbid states of the organs, amenorrhœa, chlorosis, constipation, suppression or retention of urine, &c.

**PORTABLE SHOWER-BATH.**—This is a modification of effusion, the water being showered instead of poured over the body, and in effect it amounts to precisely the same thing as the ordinary process of effusion. Convenient machines, holding two quarts or more, for showering by hand, are made by most of the families.

**THE AFFUSION-BATH.**—Pouring water over the neck, chest, and shoulders, the patient standing in a tub when it is desirable not to wet the floor, is called an affusion. It is as good as any other form of bath where its intention is simply to cool the body, as in the hot stage of

fevers and active inflammations. Dr. Clarke employed affusions extensively, and with remarkable success, in the treatment of malarial fever, measles, small-pox, and other diseases, at Liverpool, England, half a century ago; but, unfortunately, the medical faculty of the present day, who acknowledge the superior success of his practice, do not use it to imitate it. Affusions are performed with tepid, cool, or cold water, according to the degree of malarial heat attending the disease.

**TOWEL OR SPOUGE-BATH.**—Washing the whole surface of the body with a towel or sponge is a very good prophylactic; and it may be employed in water-treatment as a substitute for various other baths, when the requisite apparatuses for the latter are wanting. The particular advantage of this bath is, it can be taken at any time and place, whenever and wherever desired. The towel is preferable to the sponge, because its friction is more perfect and uniform. I should be unwilling to dress, on rising from bed in the morning, without first rubbing the whole surface with a wet towel, unless some other general bath was accessible; and a towel and quart of water can always be had at a hotel or on board a steamer. Fine nitrates can never be employed in any more profitable way. That parent can hardly be said to "train up a child in the way it should go," who does not instruct it in the use of a towel wash, or some other bath, every morning, at all seasons of the year.

**WET-DRESS BATH.**—This is a modification of the wet sheet, consisting the patient in dispersion with the services of an attendant—a mode of self-packing. A linen sheet is fastened into the form of a night-dress, with large sleeves; and after the bed is prepared, the dress can be wet and thrown on; the patient can then get into bed, and wring himself sufficiently to get a very good wringing up. If the bed-clothes are not too heavy, nor wrapped too tightly, almost any person can extremely feebly, and remain in this wet dress all night without the least injury, shivering as the idea may be to our alcoholic friends.

**WARM AND HOT BATHS.**—These are objected to by some German hydropaths, as not being Pylomotoric, but for no other reason that I can imagine. They are, however, only occasionally employed at the American establishments, not being a regular part of any judicious course of treatment. But for quieting particular symptoms, and allaying excessive nervous irritability, they are sometimes eminently serviceable. In cramps, colic, spasms, and convulsions, they operate ad-

sirably. It sometimes happens that a patient, while under treatment, will, without any unusual exposure, experience all the symptoms of a severe cold, feverishness, headache, sensitiveness to the atmosphere, chilliness, and various aches and pains. All these disagreeable symptoms can generally be removed at once by a hot bath for ten minutes; and if the bath is succeeded by a dry blanket, blanket or dripping sheet, no appreciable debility will result. Patients who have taken large quantities of mercury, antimony, or other, are peculiarly liable to febrile disturbances, and to occasional swellings of the joints and stiffness of the muscles, which a warm or hot bath at once relieves. For all of the purposes above indicated the bath should be as warm as the patient can bear without discomfort; a temperature that is warm to one may be hot to another; the proper temperature ranges from 94° to 110°.

**THE SWIMMING-BATH.**—The exercise of swimming is eminently health-preserving, and might with propriety have been treated of in our hygienic department; but as it is also eminently therapeutic in some forms of chronic disease, the subject is not inappropriate here. For that large class of invalids who are debilitated from feeble lungs and contracted chests, and for a still larger class of dyspeptics, who are confined from torpid or contracted abdominal muscles, there is no better exercise than that of swimming. All persons, too, whether invalids or not, ought to know how to swim, on prudential considerations.

As all the exercises involved in the various methods of learning to swim are just as serviceable to the invalid or weak person, as those which may be practised after the art is acquired, and for the purpose of enabling the inmates of hydrophobic establishments, where artificial streams or ponds of water can be found, to do themselves the service of nature, I copy from one of Fowler and Wells' publications the following illustrations:

Fig. 173.



SWIMMING WITH A BLADDER.

Various supports may be resorted to while the learner is getting accustomed to the necessary motions. Corks and bladder are convenient. Fig. 174 represents a bladder, well blown, and fastened over the shoulders by a rope passed under the chest. Large pieces of cork may be attached to each end of a rope and used for the same purpose. The supports

each end of a rope and used for the same purpose. The supports



must always be carefully secured near the shoulders. Or, should they slip down, they would plunge the head under water.

Swimming with the plank (fig. 175) has two advantages. The young teacher has always the means of saving himself from the effects of a sudden cramp, and he can practice with facility the necessary motion with the legs and feet, aided by the momentum of the plank. A piece of light wood, three or four feet long, two feet wide, and about two inches thick, will answer very well for this purpose. The chin may be rested upon the end, and the arms outstretched, but this must be done carefully, or the support may go beyond the young swimmer's reach.

The rope (fig. 176) is another artificial support, which has its advantages. A rope may be attached to a pole, fastened—and axed—that it be well fastened—in the bank, or it may be attached, as shown in the engraving, to the branch of an overhanging tree.

Taken in the hands, the swimmer may practice with his legs, or by holding it in his teeth, he may use all his limbs at once.

The rope, however, is not so good as the plank, as it allows of less freedom of motion, and the latter might easily be so fixed as to be held of by the teeth, and held securely.

Wherever a descending grade can be found, the learner can soon become a good swimmer, with no artificial assistance, by resting in the water up to the neck, and then paddling to the shore.

In swimming, the feet should be about two feet below the surface. The hands should be placed just in front of the breast, pointing forward, the fingers kept close together, and the thumb to the fingers, so as to form a slightly hollow paddle. Now strike the hands forward as far as possible, but not bringing them to the surface; then make a sweep backward to the hips, the hands being turned downward and outward; then bring them back under the body, and with a little re-

FIG. 175.



SWIMMING WITH THE PLANK.

FIG. 176.



SWIMMING WITH THE ROPE.

distance as may be, to their former position, and continue as before. The hands have three motions—First, from their position at the breast, they are pushed straight forward; second, the sweep round to the hips, like an oar, the closed and hollowed hands being the pushing part, and their position in the water and descent serving both to propel and sustain the body; and, third, they are brought back under the body to the first position.

Having learned these motions by practising them slowly, the pupil should proceed to learn the still more important motions of the legs. These are likewise three in number; one of preparation, and two of propulsion. First, the legs are drawn up as far as possible, by bending the knees, and keeping the feet widely separated; second, they are pushed with force backward and outward, so that they spread as far as possible; and, third, the legs are brought together, thus acting powerfully upon the wedge of water which they enclosed.

Some works upon swimming advise that the propelling stroke of the arms and legs should be used alternately; but this is not the method used by good swimmers, or by that host of teachers, the frog, of whom I would advise all new beginners to take lesson. It is better that the feet should be brought up at the same time that the hands are carried to their first position; the propelling strokes may then be combined so as to give the body its most powerful impetus, as a boat is rowed best with simultaneous strokes.

The motion in the water should be as straight forward as possible, and the more the head is immersed the easier is the swimming. Rising at every stroke—breasting, as it is called—is both tiresome and inelegant.

All these movements should be made with slowness, and deliberately, without the least hurry. The learner will most benefit naturally, and as the motions are really learned, he will not be long in acquiring them. If he draw in his breath as he rises, and breathe it out as he sinks, he

FIG. 177.



PLUNGING OR DIVING.

will then his strokes, and avoid swallowing water. Those who have been accustomed to fresh water must be particularly careful when they go into the sea, the water of which is very brackish.

In leaping into the water, feet first, which is done from rocks, bridges, and even from the garls and nests of billy

rounds, the feet must be kept close together, and the arms either held close to the side, or over the head. In diving head foremost, the hands must be put together, as in the engraving (fig. 177), as also to divide the water before the head. The hands are also in the proper position for striking out.

Treading the water (fig. 178) is a favorite position, and useful as a means of resting in swimming long distances. The position is perpendicular; the hands are placed upon the hips, as in the vignette, or kept close to the side, to assist in balancing the body, being moved like fins at the wrist only. The feet are pushed down alternately, so as to support the head above water; and the body may be raised in this way to a considerable extent. While in this position, if the head be thrown back, so as to bring the nose and mouth uppermost, and the chest somewhat inflated, the swimmer may sink till his head is nearly covered, and remain for any length of time in this position without motion, taking care to breathe very slowly.

In swimming on either side (fig. 179), the motions of the legs have no alteration, but are performed as usual. To swim on the left side, lower that side, which is done with the slightest effort, and requires no instruction. Then strike forward with the left hand, and sideways with the right, keeping the back of the latter in the front, with the thumb side downward, so as to act as an oar. In turning to the other side, strike out with the right hand, and rest the left for an oar. To swim on each side alternately, stretch out the lower arm the instant that a stroke is made by the feet, and strike with the other arm as a level with the head at the instant that the feet are urging the swimmer forward; and while the upper hand is carried forward, and the feet are contracted, the lower hand must be drawn toward the body. This method is full of variety, and capable of great rapidity, but it is also very fatiguing.

Thrusting (fig. 180) is a beautiful variety of this exercise, and much used by accomplished swimmers. The legs and feet are worked as

Fig. 178.



TREADING WATER.

Fig. 179.



SIDE SWIMMING.

in ordinary swimming, but the hands and arms very differently. One

Fig. 181.



THRUSTING

arm, say the right, should be lifted wholly out of the water, thrust forward to its utmost reaching, and then dropped upon the water with the hand hollowed, and then brought back by a powerful movement, pulling the water toward the opposite arm-pit. At the same time the body must be sustained and steadied by the left hand, working in a small circle, and as the right arm comes back from its far reach to the arm-pit, the left is carrying in an easy sweep from the breast to the hip. The left arm is thrust forward alternately with the right, and by these varied movements great rapidity is combined with much ease.

Swimming on the back (fig. 182) is the easiest of all modes of swim-

Fig. 182.



SWIMMING ON THE BACK.

ming, because in this way a larger portion of the body is supported by the water. It is very useful to rest the swimmer from the greater exertion of more rapid methods, and especially when a long continuance in deep water is unavoidable. The swimmer can turn easily to this position, or if learning, he has but to incline slowly backward, keeping his head on a line with his body, and letting his nose sink below the surface. Then placing his hands upon his hips, he can push himself along with his feet and legs with perfect ease and considerable rapidity.

The hands may be used to assist in propelling in this mode, by bringing them up obliquely toward the armpits, and then pushing them down, the fingers facing inward, and the thumb part down. This is called "winging."

The hands may be used at discretion, the application of force in one direction, of course, giving motion in the other; and the best methods

Fig. 183.



FLOATING.

are soon learned when once the pupil has acquired confidence in his buoyant powers.

Floating (fig. 183) is so useful a part of the art of swimming, that it cannot be



too soon obtained. In salt water, nothing is easier; and in fresh, to most persons, it requires but the slightest exertion. The feet should be stretched out, and the arms extended upward, so as to be at least as high as the top of the head, and under water. The head must be held back, the chin raised, and the chest expanded. The hands will easily keep the body in this horizontal position, and by breathing carefully a person may float at ease for hours. Could a person, unable to swim, but having the presence of mind to take this position, he could scarcely drown.

To leave the water, the legs are raised out of it alternately while swimming on the back, the body being sustained by the hands.

While swimming on the breast, one leg may be carried backward, and taken hold of by the opposite hand, and the swimming continued with the leg and hand kept unemployed. This is said to be useful when taken with the *croup* in one leg.

Swimming under water should be done with the eyes open. If you would swim midway between the bottom and the surface, make the strokes of the arms and the hands inward, *i. e.* toward you, as if you would embrace the water by large armfuls, keeping the thumbs turned rather downward. These are most important maxims. You are thus enabled to pass unseen across a river or branch of water, or to search for any thing which has fallen to the bottom, and also to rescue any one who is drowning. Bating, and swimming under water should not be attempted until the swimmer becomes expert in the other processes.

**EYE AND EAR BATHS.**—Various contrivances have been employed to bring the bathing processes to bear on the eyes and ears more powerfully than by means of wet cloths. The best are ascending, or obliquely ascending douches or showers. The force should always be moderate, but may be applied for a considerable time. They are useful in chronic inflammation, attended with much pain or intolerance of light, partial blindness or deafness from hyperæmia of the nerves or obstruction of the vessels, weakness of vision without preternatural sensibility, spots, incipient amaurosis, gathering in the ears, &c.

**THE NASAL-BATH.**—Stuffing water up the nostrils, or drawing it so far into the nasal cavities as to be ejected by the nostrils, is very useful in chronic inflammation, and in a relaxed or weakened state of the mucous membrane of the nose. In common colds, and catarrhal affections, the process is salutary. For debility, relaxation, or dryness of the mucous membrane from the use of snuff, it may be employed perseveringly to advantage. For nose-bleeding, the water should be

as cold as possible. After the removal of soft polyps from the nostrils, cool-water should be employed frequently to counteract the remedy. In employing the nasal-tort, the water should be taken up by gentle, full inspirations, not by a sudden jerking motion, as this often gives pain and increases irritation.

**THE MOUTH, OR MOUTH-BATH.**—Gargling the mouth with pure cold water should not be omitted in inflammatory affections of the throat or palate. For sore or swelled gums, toothache, hoarseness, and all related secretions, cool or cold water should be frequently held in the mouth until it becomes warm, and then repeated. In aphthae or ulcerous affections of the mouth, water should be employed in the same way. Relaxation or falling of the uvula, or soft palate, can generally be relieved or cured by gargling perseveringly with the coldest water, or by holding lumps of ice in the mouth. Tobacco-chewers should first abandon the filthy habit, and then employ the cold mouth-bath to restore the natural sensibility of the mucous membrane, and a healthy secretion of saliva.

**THE ARM-BATH.**—For old ulcers, and recent or chronic swellings of any part of the arm, holding the affected part in cold water from fifteen minutes to an hour, will greatly assist in healing the ulcer or absorbing the swelling. Erysipels and rheumatic affections, in fact, all morbid conditions of the upper extremity, attended with preternatural heat, should be treated locally, by holding the part diseased in cool or cold water, or wrapping it in wet cloths, to be frequently changed, until the temperature becomes natural. In erysipelatous affections, which are liable to change the seat of inflammation, as with gonorrhea, &c., especially mercurial discharges, care should be taken to discontinue the cold application as soon as the morbid heat is thoroughly subdued. When cold applications increase the pulse, warm or hot may be substituted.

**THE HAND-BATH.**—Hemoidal eruptions of the hands, or eruptions, is relieved by holding them frequently in very cold water, rubbing them gently at the same time. Wart-like excrescences are often stayed by chafing the hands severely by holding them a long time in the coldest water.

**THE FINGER-BATH.**—This is employed for felons or whitlows, and other similar affections. The temperature of the water should, in all cases, be that which feels most agreeable during its application.

**THE LEG-BATH.**—The lower limbs are much more liable to chronic swellings, ulcers, gouts and rheumatic enlargements, etc., than the upper, on account of the adverse relation of the force of gravitation to the weakened vessels. The knee-joint is occasionally affected with a chronic inflammation of its meninges—*synovitis*—for which the leg-bath is serviceable. A tin vessel, shaped something like a boot, large and long enough to take in the leg above the knee, is a convenient means of administering this bath. If the patient is crippled, an Indian-rubber bag, constructed with straps, by which it may be hung upon a chair, or fastened to the side of the bed, is more convenient. It may be employed from fifteen minutes to one hour. There is no danger of producing metastases, or driving the disease to internal parts, in any form of rheumatic or gouty inflammation, provided the application is not continued beyond the point of reducing the temperature to the normal standard.

**THE DROP-BATH.**—This process is not often resorted to, nor is it even mentioned in some hydrothermic books. Still it is sometimes serviceable, and ought to be understood. Wlass gives the best description of it:

"This term is applied to single drops of water falling from a height of several fallers. A vessel is filled with very cold water, and furnished with a small aperture, through which the water passes in the form of drops. The small aperture should be partially closed by a plug, to prevent the drops from following each other in rapid succession. By these means their operation is considerably increased, and it becomes yet more potent if we allow the drops to fall upon a particular part at certain periods, and rub the part during the intervals. The reaction about to commence will indeed be thus interrupted, but will afterward make its appearance in a more powerful and energetic form.

"The violent excitement and irritation of the nervous system produced by these baths, render it necessary to restrict the use of them to half an hour: nor are they, indeed, adapted for vital parts, or such as are abundantly supplied with nerves.

"They are often used with good effect in obstinate and chronic cases of pruritus than the douche or affusion, with which they may alternate. Powerful and continued friction with a horse-hair glove is never in this case to be neglected after the bath."

**THE AIR-BATH.**—This is not quite a water-cure process, but as air, as well as water, in all its adaptations to health-producing purposes, belongs to the Water-Cure system, the air-bath may be properly con-

advised in this place. It consists of the sudden exposure of the whole body, in a state of nudity, to cool or cold air, or even a strong current. It is employed under precisely the same regulations as a cold-water bath. It is certainly a very interesting process, and may always be safely applied to the whole body when the body is in a sensible glow, or when the temperature is above the natural standard, and generally, also, when the temperature is at the natural standard, provided there is no sensation of shivering present. It is useful, moreover, to expose any painful or inflamed part to cold air, at any time when the sensation of cold is agreeable. The air-bath has sometimes followed the wet-pack, the steam-bath, exercise, etc., being employed to keep up comfortable reaction after it.

Striking naked in a cold room for from ten minutes to an hour has been practiced by some persons as a hygienic measure. There are few persons who cannot bear a moderate degree of such exposure to advantage. Those of feeble circulation would do better to walk, jump, dance, or exercise in some other way. Franklin, whose practical sagacity and keen observation have attained a world-wide celebrity, accustomed himself to sit and read half an hour or an hour morning in the morning, before dressing.

Walking the roots in a state of entire nudity, has been resorted to for the purpose of promoting sleep in very restless, dream-disturbed individuals, and it is said to conduce remarkably to quiet and refreshing sleep. I have known this experiment tried frequently, and always with good effect.

Patients suffering from fevers and inflammatory disorders, under the popular practice, generally have their sufferings greatly aggravated by too much bed-clothing. From a vague apprehension of catching cold, they are half-naked with excess of heat. There is no danger whatever of cold air in any quantity or degree in such cases, so long as the whole surface is preternaturally hot.

**FOURTH RULES.**—Warm and hot fomentations are useful in a variety of marked conditions. They are relaxing and relaxant, and are appropriate in cases of spasmodic pains, muscular contractions, pericardial headache, hysterical convulsions, etc., when the state of the system is not seriously inflammatory, nor the local part preternaturally hot. In the latter case, cold applications are the most efficacious to allay the pains or cramps. A very good and perfectly safe rule for all practical purposes, in the selection of cold, cool, warm, or hot local applications, is the sensation of the patient. That temperature which feels the best is the best. This rule will apply to cramps, spasms, colic, tooth-



aches, lachrye, vertigo and irregular pains from various chronic diseases, rheuma, pleurodynia, etc.

But it must be recollected that all very warm or hot applications are always for occasional, never for constant employment. They are to be regarded in every case as temporary expedients, specially intended to quiet pain, subdue local irritation, and remove irregular spasmodic contractions, or as adjutants to the general curative course; and rightly managed with this view, they are highly important as well as pleasant resources. They produce temporary relaxation, but no permanent debility when used in connection with more or less cold bathing, as would be the case were they employed alone.

The French method of hot fomentations, as highly recommended by Dr. Galy, is as efficacious and perhaps more convenient than any other in use: A piece of flannel three-folded is put into a dry basin, and very hot water poured on it, sufficiently to soak it. The flannel is then put into the corner of a towel, which is twisted round it, and wrung until the flannel is only damp. It is taken out of the towel, and immediately laid over the part to be fomented, and upon it is placed a double fold of thick flannel, dry, or part of a light blanket. The patient then, if it be the abdomen which is fomented, draws the ordinary bed-clothes over him, and remains quiet for five or six minutes, when another flannel freshly wrung out is applied, the former one being withdrawn.

The cloth seldom requires changing more than three or four times. Generally relief is obtained in ten or fifteen minutes. I have very often witnessed the best effects from this fomentation in nervous and dyspeptic headaches, in globus hystericus—the sense of suffocation often accompanying hysteria, and in painful menstruation. It is also frequently effected in relieving, for the time, asthmatic fits, convulsions from teething or indigestion, neuralgia in the head or face; it will generally also produce relaxation of the bladder or bowels, in cases of retention of urine and severe constipation. In those severe derangements of the stomach and liver, attended with excessive heat, severe retching and vomiting, intolerance of food and drink, &c., &c., &c., in connection with the pouring of cold water over the back of the head and temples, will usually afford prompt relief, as I have many times experienced. For all these purposes the fomenting cloth should be large enough to cover half or two thirds of the surface of the abdomen.

There are some delicate females, of bloodless skin and feeble vitality, who find it extremely difficult to get comfortably warm in the wet sheet, and such may be very much assisted by a fomentation to the abdomen for five minutes before and after the pack.

Rest, and not exercise, should succeed the application of hot fomentations, except when they are employed as an auxiliary to and followed by a cold bath.

I have thus far spoken only of hot fomentations to the skin; and indeed it may even cut of ice where this process is indicated in all the place and manner described will answer all purposes. Yet in various local, spasmodic, or periodical pains they may be applied as near the part affected as possible. In affections of less severity, wet cloths of any kind, applied as hot as can be borne, will prove sufficient.

**BASTINGS.**—These may be heat morning or evening processes, as indicated, and answer all the purposes of the awkward basting, and expensive machinery of liniments, lotions, poultices, embrocations, blisters, rubefacients, epispastics, cappings, issues, burnings, and other external drug appliances of the old school.

A *morning basting*, or *enquiry*, is simply one or more folds of linen cloth, wet in cold water, applied to the part affected, and covered with a dry cloth or other material, to retain the actual heat.

A *morning basting*, or *enquiry*, is a similar wet application without the dry covering, or with the covering so light as to allow the actual heat readily to pass off. In both cases the cloth is to be renewed as often as it becomes dry. As usually managed, these compresses are both cooling and warming, the first impression being cold, and the reaction leaving a glow upon the surface; but they can be made to produce a constantly cooling effect by very lightly covering and frequently changing them, or a very heating effect by covering them with flannel or other non-conducting material.

Cause: *India rubber*, in diseases much fermenting, is the most suitable cloth to be wetted; and for the *dry covering*, the same material, or any common tannin, will answer in warm weather, and soft flannel in cold weather. India rubber, guta percha, and oiled silk have all been in repute, and a few years ago were very generally employed for coverings. I regard them all as objectionable. They do indeed seem to prevent evaporation, and retain more perfectly the actual heat, and they also keep the part moist longer; and they seem, too, to have a more drawing or derivative influence, if the more ready production of eruptions or both indicates such influence. But they retain the effluvia perspirable matter which should pass off; and their non-conducting, or non-electric property renders them relaxing and weakening to the cutaneous function.

It seems to me that, in all cases, cloth coverings are the best. If they produce a less number of boils or less painful eruptions, the cure

will nevertheless be as prompt and even more perfect. When the skin is soaped and cold. Canton or soft, light, woolen flannel answers every purpose; and if necessary, for very feeble patients who are unable to take much exercise, two or three thicknesses may be used.

**THE UNDER-WRAPPER.**—This is advantageously employed in nearly all chronic diseases of the chest, as insipient consumption, bronchitis, in the very early stage of hydrothorax, or dropsy of the chest, emphysema or periodical asthma, etc. It may be made of coarse toweling, or two or three folds of muslin, and fitted with arm-holes, loosely to the trunk of the body from the neck, nearly or quite down to the hips. The outside covering is a similar wrapper, made of the same material, or of damask. The inner, or wet wrapper, is tied as tightly around the body as desired by tapes, which are attached in the top, bottom, and middle, and the outside or dry wrapper is either tied around it, or the inner one is fastened to the water.

There is some discrepancy in the views of different hydropaths, as to whether the wet cloth should extend entirely around the body, or a few inches over the spine be left uncovered. Here again, as in most of the varied questions which occur in hydropathic bathing, the feelings of the patient are our best guide. If the wet cloth over the spine does not produce any disagreeable chilliness, pain, or weakness, different from what is experienced when the partial wrapper is worn, I would have it entirely encircle the trunk; otherwise a space of from four to six inches in the center of the back should be uncovered by the wet cloth.

This may be worn day and night for several weeks, provided it produces no uncomfortable chilliness during the day, and does not become so warm and dry as to make the patient restless during the night. In the former case it should only be worn during the warmest part of the day, or during the time allotted to exercise, or from the morning bath until noon, or from the forenoon bath until evening. In the latter case it may be worn during the day, and omitted at night. It usually requires washing when worn constantly, in the morning, toward noon, toward evening, and at bedtime.

**THE ABDOMINAL WRAPPER.**—The wet girdle, or abdominal compress, as this is generally called, is more generally employed than any other local hydropathic application. Derangements of the digestive organs are so prevalent nowadays that those who do not thus complain are exceptions to the general rule. And for all of these complaints this

bandage is appropriate. It is also serviceable in all chronic diseases of the liver, and in all diseases of the abdominal viscera, as inflammation of the stomach and bowels, cholera, dysentery, cholera morbus, diarrhoea, etc.; it is always employed with benefit.

A great deal of ingenuity has been wasted in contriving abdominal compression. But the best invention of all is three yards of common crash towel cloth. One half of this is wet, and moderately wrung; the wet end is applied to the side of the abdomen, then the bandage is passed across the shoulders, and around the body, followed by the dry half. This brings two folds of the wet part over the front of the abdomen, and one behind. Whether it is to be extended entirely around the body, must be determined by the rule mentioned as applicable to the chest-wrapper. The proper crash cloth is from twelve to sixteen inches wide, and covers the trunk from the short ribs to the hips, descending a little over the latter. As with the chest-wrapper, it may be worn constantly or occasionally. It should never be applied so tightly as to hinder in the least free respiration. It may be kept in place by tapes or girth.

This bandage is employed more or less in all cases of dyspnoea, liver complaints, catarrhes, jaundice of the liver, inflammation of the pancreas, spleen, kidneys, and bladder, obstructions of the menstrual glands, all forms of misæstimation and female weakness, in a word, in all chronic visceral conditions of the abdominal and pelvic viscera, and in all states of weakness or relaxation in their ligaments or muscles. Persons who have weakened the abdominal muscles and viscera by sedentary habits and crooked bodily positions, experience great benefit from its use.

**FRICTIO.**—Hand-rubbing, towel-rubbing, rubbing the skin over the wet or dry sheet, and with a flesh-brush or horse-hair gloves, are among the accompaniments of the bathing processes. Their object is to assist reaction and promote capillary circulation. As a general rule, patients should practice as much self-rubbing as convenient, at the same time that they are assisted by the attendant, because the exercise of so doing is an advantage of itself. As a general rule, too, the amount of friction in such case should be proportioned to the thickness and texture of the skin; and another general rule may be stated in relation to friction, which is, that it should be entire and equal, without undue harsh or scraping; rather magnetic than forcible. Some invalids, on the mistaken notion that the harder they are rubbed the more will they become ruddy and vigorous, keep the attendants at work, if they be good-natured, and object not, till completely exhausted; hence



the physician should always instruct the attendants well in this particular duty.

**TEMPERATURE OF BATHS.**—Hot, warm, tepid, cool, and cold are only employed as approximate terms. Water that feels hot to one may be only warm to another, and what is cold to one is sometimes tepid to another. The sensations of the patient are generally a better guide for regulating the temperature of a given bath than is the thermometer; still, the latter is indispensable in many cases, and is all convenient. As a general rule, the more feeble and delicate the patient, the more strictly should we follow the test of his feelings in administering tepid, warm, cool, or cold baths. When the circulation is vigorous, and the vital temperature well developed, we may regulate any bath with sufficient precision by the thermometer. It is a useful precaution, when commencing treatment with very susceptible patients, to test their sensibility to different temperatures of water, after which the physician or priest can prescribe them therapeutically. Some Water-Cure books seem to make it an especial point to be therapeutically exact in directing particular baths for given diseases, as for example: sitz-bath, at 59°; shallow-bath, at 63°; half-bath, at 74°, etc. These also distinctions are not to be arbitrarily insisted, but may be regarded as landmarks, to keep us within reasonable bounds.

Baths may be distinguished into cold, below 65° Fahr.; tepid, 65° to 80°; warm, 80° to 98°; and hot, above 98°. But a better division may be made thus:

Very cold, 32° to 40°.	Tepid, 72° to 85°.
Cold, 40° to 55°.	Warm, 85° to 98°.
Cool, 55° to 65°.	Hot, 98° to 115°.
Temperate, 65° to 72°.	Vapor, 94° to 125°.

The term moderately tepid, warm, cool, or cold, when occurring in this work, means some degree between the bath named and temperate, or the next bath in the scale, reckoning toward temperate; thus moderately hot would mean a temperature between 98° and 105°, etc.

**DEVIATION OF BATHS.**—There is the same mystical yet interesting exactness about the time of continuing a given bath, to fulfill a particular indication, in every Water-Cure book, that there is about the temperature. But here, again, we have better guides than seconds and minutes, in the feelings of the patients and in the effects produced. It

is true an experienced hydropathist, on examining a patient, determines at once about the proper length of time is advisable, and of his bath; but this time should always have a reserve relation to the condition of the patient, and the even total of all the treatment prescribed, than to the want of the *force*. A general rule may be laid down, that all patients should have all baths to a period short of producing any very depressing chill; and never continue any one to the point of producing a second chill after the reaction has once taken place in the bath. In hot-water-treatment the safer way is to make so frequent and short baths, rather than few and long.

**GENERAL RULES FOR HYDROPATHIC BATHING.**—1. No bath should be taken on a full stomach. General baths, as the wet-sheet, plunge, douche, shower, etc., should not be taken until the process of digestion is nearly or quite completed—from three to four hours after a full meal. Local baths, as the leg, foot, hand, leg, etc., may be taken in an hour after a light, and two hours after a heavy meal. Bandages may be applied at any time.

2. Patients should rest out immediately after a bath. An hour is soon enough after a full, and half an hour after a local bath.

3. All patients who are able should exercise moderately previous to a bath, unless at the bath time the body is already in a warm glow; and after a bath, according to muscular strength. The more exercise short of absolute fatigue the better. By absolute fatigue I mean that degree of exhaustion which is not readily recovered from at rest.

4. In very warm weather the most active exercise should be taken before breakfast; and during the heat of the day it should not be crowded beyond what is perfectly agreeable.

5. No strong shock should ever be made upon the head. A shower or full douche, poured on not dashed on, is not objectionable for those who enjoy a tolerably well-balanced circulation, and are not subject to nervous headache.

6. Profuse perspiration, or great heat of the body, is no objection to any form of cold bath, provided the body is not in a state of exhaustion from over-exertion, nor the breathing disturbed. This point is generally misunderstood by physicians, and medical books of the old school, are wholly in error about it. The majority of people imagine that the sudden transition from cold to heat is dangerous. The danger is all on the other side—in applying cold when the body is already too cold. Again, it is thought that a cold bath, when the body is dripping with sweat, will check the perspiration, and be immense mischief by doing it! This is a mere phantasy. The matter of perspiration is a

viscid, waste, dead, effete material, and its presence on the surface has nothing whetmore to do with the effect of a cold bath. It may be as easily washed off with cold water when the body is hot, as can any other extraneous matter adherent to the surface.

But persons are often injured by going into cold water when the body is hot and perspirable. Granted. I have known several young men made cripples for life by this practice. Now what is the explanation? Either the body was too cold, or in a state of exhaustion, or the respiration was materially disturbed, or the stomach was loaded, or all of these conditions existed together. There is a reciprocal relation between circulation and respiration, which cannot be greatly disturbed without injury. If a person jumps into cold water when out of breath from violent exercise, he endangers his health, because the intimate sympathy between the action of the heart and lungs will prevent reaction to the surface, and the result is internal congestion. Under all other circumstances, a warm or hot skin is favorable to any cold application, while the state of perspiration is a matter of no sort of consequence one way or the other. Dr. Johnson remarks: "Bring in a state of perspiration is no objection to taking any bath, except the etc. foot, and back-bath." If the rules I have laid down are duly observed, there can be no force in the objection of Dr. Johnson.

7. When full treatment is prescribed, as three, four, or five baths a day, the patient should take the most powerful, or those which produce the greatest shock, on rising, and in the early part of the day.

8. Wetting the head, and even the chest, is a useful precaution before taking any full bath, and especially important for patients who are liable to head affections.

**WATER-DRINKING.**—The indiscriminate drinking of large quantities of water, as has been the custom at some establishments, is not to be commended. The amount that can be taken to advantage varies greatly according to disease, temperament, exercise, diet, &c. Persons of large chest and slenderness, of florid complexion and active capillary circulation, can drink with satisfaction, and require, while under treatment, a free use of water as drink—from twelve to twenty quibblons. On the contrary, those of thin, spare body, nervous temperament, and especially if the skin appears bilious, and the pores, as it were, glued together, cannot take, with profit, more than three to six tumbblers daily. In the former case the water is rapidly absorbed from the stomach, and thrown off by the skin; in the latter case it lies, as it were, like a dead weight in the first passages, and is finally carried off slowly by the kidneys.

Considerable allowance must also be made for the amount of exercise the patient can take, and the kind of food partaken of. The greater the amount of exercise, the more copious the transpiration, and the more water required. Those who use much animal food, salt, or other seasonings, greens of any kind, or concentrated farinaceous food, require a much larger quantity of water—other circumstances being equal, than those who restrict themselves to a plain vegetable diet. Patients should always drink to the extent of thirst; but for a general rule while under treatment, water should be taken most freely early in the morning, after the bath, and again about the middle of the forenoon; a less quantity still in the afternoon, and little or none in the evening. Very little should be drunk at meals.

There are some few dyspeptics whose stomachs are so contracted and sensitive, whose livers are so torpid, and whose capillary circulation is diminished, that even a single tumbler of cold water produces a painful heaviness and distressing sickness of the stomach. Such individuals should begin with half a tumbler, or even less, and gradually but carefully increase the quantity, as it can be borne without producing unpleasant sensations. In such cases, too, the water drunk should never be very cold; the best temperature is from 50° to 60°.

Dr. Gully, Johnson, Wilson, and Hamon, very severely and very justly reprobates the indiscriminate practice of large water-drinking, which is so lightly and extravagantly recommended in some works on Water-Cure. I have seen not a little mischief result from it; in some practice water-drinking is particularly liable to be overdone. Some persons have boasted of the "ravenous appetite" produced by drinking twenty or thirty tumblers of water a day; but I cannot understand the advantage of ravenous appetites; they are generally indices of excessive morbid irritation in the stomach.

The rule for those who have not an intelligent hydropath to advise with, is to follow the sensations of the stomach; take all that produces pleasurable sensations, and no more. More or less water should always be taken after each bath. Exercise should succeed water-drinking, and, as already intimated, it should be proportioned to the amount of water taken.

**LEVEMENTS AND INJECTIONS.**—These are used as cleansing and relieving, or tonic and contracting processes. For the former purposes tepid or warm water is employed, and for the latter cool or cold. On the first attack of acute diseases of the bowels, cholera, dysentery, colic, diarrhoea, &c., copious tepid injections should be promptly resorted to, and succeeded, when the alimentary canal is well cleansed, by



cool injections. In obstinate constipation from debility, cold injections should be employed daily until general treatment and diet can reproduce the ordinary peristaltic action. In hemorrhoids an injection of a small quantity of cold water just previous to the expected movement of the bowels, greatly assists the healing process. Chronic diarrhea generally requires cool or cold injections occasionally. In all chronic mucous or mucopurulent discharges from the bowels, bladder, ureters, or vagina, injections of a temperature suited to the susceptibility of the part affected, or the degree of inflammation, are an indispensable part of the treatment. In gleet, leucorrhœa, prolapsus, and menorrhagia, they should be freely used as strengthening processes. After parturition the vagina should be cleansed with a cool injection. The most convenient instrument for self-treatment is the pump-syringe for the bowels. The curved tube vaginal syringe is indispensable for females. In some affections of the uterus and vagina, a small tube speculum is necessary to be introduced to enable the water to come in contact with as large a surface as possible while employing the sitz-bath. The Union India Rubber Company, of this city (office 13 Nassau Street), has just brought out an admirable apparatus for throwing water up the rectum or vagina with any degree of force required. It consists of a bag, holding a gallon or more, which is filled with water and elevated, by hanging on a hook or rail six, eight, or ten feet. The force of the stream is regulated by pressure on a long tube which conveys the water from the bag or fountain; and to the end of this tube suitable pipes are adjusted to convey the water up the vaginal or intestinal passage. This apparatus is cheap and not liable to get out of order.

### CHAPTER III.

#### CRISES

DIAGNOSIS OF CRISIS.—The doctrine of crisis is as ancient as Hippocrates. Acute diseases, when left to themselves, often terminate by some spontaneous evacuation; and chronic diseases, when left to the gradual remedial powers of nature, are frequently resolved by some external eruption or internal chronic. Under water-treatment, acute diseases are generally relieved by such yet effectual functional efforts of all the secretory organs, unattended with any great convulsion or

the organism, or strong determination to any one territory, or abating of the vital powers, which can be called in any sense critical.

But with chronic diseases the case is often very different. Many cases, indeed, recover without any disturbance which can properly be designated a crisis; others recover after repeated disturbances, more or less severe, which may be called critical efforts; and others, after one or several paroxysms of general or local excitement, attended with some profuse evacuation, severe boils or eruptions, a general feverishness, or an aggravation of all, half-forgotten sores, pains, or other local affections.

**POINTS OF CRISIS.**—The most common forms in which crises, or critical efforts, present themselves are, *diarrhoea, boils, and general feverishness.* Boils present all manner of appearances from the hard, diffused, inflammatory swelling, with scarcely any suppurating point, to the deep, fully-entured, sub-cutaneous abscess; there may be one or several at the same time, or they may succeed each other for weeks or months, and be very painful, or scarcely troublesome. Those of full habit, sanguine temperament, and active external circulation, are most subject to boils and eruptions.

**DIARRHOEA,** when purely critical, comes on without any accidental or natural exposure or dietic cause, and continues with greater or less severity from three days to two weeks. There is not usually much pain, griping, or distress of any kind in the bowels, but the evacuations are thin, watery, and frequent; generally there are from three to six or eight motions in twenty hours. In persons who have been most subject to piles, the motions will be most frequent, and attended with considerable bearing down or dragging sensation about the lower bowel, and the discharges will exhibit a great amount of mucus or slimy matter, often intermixed with blood. A critical looseness of the bowels is not attended with debility like an ordinary diarrhoea; if long continued, there is, of course, some degree of stupor, but then the discharges are very easily checked by hot sitz-baths and cold injections. Those who have long labored under derangements of the digestive organs, and particularly those with torpid livers and constipated bowels; were especially, if these conditions are complicated with pale, yellow, bloodless skin, and shrivelled, superficial, scallery rough, are most liable to critical evacuations by the bowels; and, as far as my observation extends, they are invariably beneficial, always being succeeded by a decided sense of improvement in the patient's entire physiological condition.

The term "*Sweriknessa*," does not very well express the other com-

most forms of critical action, but I know of no better one to employ. It is characterized by more or less of the symptoms which attend an attack of simple fever, but they appear in a more engaged and irregular form. There is shivering and heat, hunger, depression, headache, tenderness, general restlessness, great sensitiveness to cold, etc., etc., but, unlike the same symptoms in a paroxysm of simple fever, they do not follow each other in the order of the cold, hot, and sweating stages. The febrile disturbance continues from one day to a week, when, unless aggravated by improper treatment, the body recovers its balance of action and feeling, and the patient feels himself advanced at least one step on the road to health. Other manifestations of critical disturbance, as eruptions, rashes, profuse sweatings, copious discharge of urine, vomitings, free evacuation of bile, etc., stiffness of the muscles, pain and swelling of joints and rheumatic joints, fetid perspirations, where coagulums are seen, etc., occasionally occur, but require no especial management save moderating or suspending a part or all of the cold treatment, as the general disturbance of the system is more or less violent, and employing soothing applications, as indicated.

**MANAGEMENT OF CRISES.**—The management of crises is not difficult; generally all that is required is an omission of some part or all of the stronger lotions, according to the violence of the crisis, and the use of such mild and soothing applications as are most agreeable to the patient. The patient should exercise or rest, as he finds either most comfortable, diet very simply, and use water freely to bath, eruptive or inflamed parts—of the temperature that feels most pleasant. If there is violent headache, it may be soothed with the hot abdominal fomentations. If the whole body is sore, tender, restless, and irritable, a hot bath should be taken for ten minutes; and if diarrhea progresses so far as to materially weaken the patient, the hot fomentation, or hot Sitz-bath, with cold injections, should be employed. Full treatment should not be resumed until the critical disturbance is entirely abated.

**RATIONALE OF CRISES.**—I do not know that it is possible to explain satisfactorily to the professional or non-professional reader the true rationale of critical action, since all the language employed in relation to vital laws, organic instincts, essential actions, etc., is necessarily more or less figurative. Authors on Water-Cure all agree that crises do occur; some regard them as of general occurrence, the cures without such phenomena being exceptions to a general rule; others contend that cures can generally be made without crises, these being the ex-

expanses; and still others regard the majority of the crises as the result of injudicious or excessive treatment.

It is perfectly certain that many bad cases of chronic disease are cured without any appearance of crises whatever; it is equally certain, in my judgment, that some few cases are utterly incurable without the production of a decided crisis; and I am fully convinced that in many cases crises are rendered unnecessarily and even dangerously severe by excessive or injudicious treatment—generally too cold or too shocking treatment. If a patient is kept continuously chilled, so that comfortable reaction does not take place between the baths, or the douche is applied so severely as to produce a state of unusual nervousness, the crises will be very apt to be injuriously violent. Hence the safer general plan of treatment, especially in house practice, is to take the slower yet surer way—do only what is clearly proper, and keep always on the safe side. In this way we only lose a little time, for which life or health should never be periled.

The diet has an important bearing on the severity of the crisis. In all cases, the more plain, simple, and strictly physiological is the food taken, the less severe and distressing will be the critical efforts; all gross, greasy, high-seasoned food, or complicated dishes render a severe treatment necessary to cure, and this necessarily involves a more violent crisis. It is a great error on the part of some physicians to allow a liberal table, and then depend on further water processes to effect the cure; the blame, however, is not all on the side of the physician, for many patients prefer to "eat what their souls lust after," and take the harder treatment, greater suffering, and less perfect cure.

Doctor J. Wain says (*Hand-Book of Hydropathy*): "The natural vital process is not to be regarded as morbid, for, with the existing disease, it has nothing in common. While a disease lasts, therefore, no crisis can ensue. The appearance of the crisis announces a return of the vessels in the diseased parts to their normal activity, the resumption of the proper functions assigned to them; or, in other words, the emancipation of the organism or its organs from disease. This is the sole significance of the crisis, according to experience and nature."

Doctor E. Johnson remarks: "That the system, by virtue of its own inherent energies, sometimes purges itself of morbid matters by a crisis; that it, by establishing some temporary outlet through which such morbid matters may and do escape, is perfectly certain. The Aleppo bed, small-pox, measles, and many other well-known diseases, prove this to demonstration, and beyond the possibility of question. In all these cases the crisis is clearly the means of cure. Without such or some similar crisis the patient must die. Whether the water-treat-



ment has the power of urging nature to the establishment of such temporary outlets is another question, to which I can only reply, that I believe it has."

Doctor Gally remarks (*Water-Cure in Chronic Diseases*): "In the course of the efforts which nature makes, with the co-operation of the Water-Cure, it sometimes happens that the new distribution of blood which they being about is so energetically affected as to cause morbid congestion of blood in other organs than the diseased viscera. In this manner congestion of the lower bowel takes place, and is exhibited in diarrhea; general congestion of the skin takes place, and is exhibited in eruptions of various kinds; or partial but more intense congestions of the skin take place, and are exhibited in eruptions of various kinds, and in boils of various degrees. To these exhibitions of transferred irritation and circulation the name of crisis is given. \* \* \* Critical action, then, as a result of the water-treatment, signifies that the viscera have been enabled to throw their irritation and blood upon some other organ, the lower bowels, or skin; and that this excess of blood, and this irritative action attempts relief by drawing out large fecal secretion, or unusual cutaneous secretion. This is all that can be said of a crisis; it is an outward and visible sign of the exercise of a power on the part of the inward organs to save themselves by a transfer of mischief to parts less essential to life."

Doctor Stone observes (*Water-Cure Manual*): "A crisis may be said to be a visible effort on the part of nature or the natural powers of the system, to rid it of some morbid matter or matters in it, or expelling them at some of the natural outlets of the system, as the skin, bowels, and kidneys. These appearances occur in the form of boils, eruptions, swellings, diarrhea, various and bloody discharges, high-colored urine, feverishness, and the like. \* \* \* The true philosophy of these apparent aggravations of disease is probably this: As the living power, or that which we call nature, becomes impregnated, a greater antagonism against disease is set up; the disease then makes a more desperate effort to remove, and, in the convulsion thus caused, there appears to be an increase of the same."

Doctor J. H. Ransom remarks (*Water-Cure in every Known Disease*): "The reactions of disease during the Water-Cure, and particularly during the critical periods are, throughout, different from every thing which has hitherto been witnessed. It cannot be otherwise, because this cure stirs up, little by little, all latent and most deeply-laden matters of disease, and eliminates them through boils, &c.; on the contrary, all former methods of cure suppress the continuation of the struggles of disease, and force the causes of disease inward. The ex-

essential distinction between water and medicine is, that the former drives the perverted matter out of the body; the latter, however, drives it into the body. For this reason the philosopher holds positively that the causes of disease are material; the water-doctor, however, makes this essential perception in every disease. Hence arise the various views of the corporeity and spirituality of disease."

Essentially all the authors above quoted mean the same things, however faintly or faintly their ideas may be clothed in language. Remedial efforts are always going on in the organism when it is in any way morbidly affected; and when these efforts are disproportionately manifest at one or more points of the body, or through one or more of the departing organs, this manifestation is called a crisis. Critical efforts attempt to perform a threefold duty: eliminate morbid matters, balance the circulation of blood, and equalize the distribution of nervous energy. This latter duty is too generally overlooked. Some authors write as though all the good effected by a crisis, a boil, for example, was the ridance of a specific quantity of morbid material; but this is a very narrow view of the subject; that is indeed one, but the limit of the remedial effects accomplished. The amount of morbid matter detached from an extraordinary individual in a week would not equal the ordinary daily elimination of morbid matter from the skin or kidneys. The greatest effect, therefore, is the removal of those efficient vital action, the better regulation of vital power from the prevailing centers of organic life.

All morbid actions are evidences of the remedial efforts of nature to overcome morbid conditions or expel morbid materials. All that any truly philosophical system of medication can do, or should attempt to do, is to place the organism under the best possible circumstances for the favorable operation of these efforts. We may thwart, embarrass, interrupt, or suppress them, as is usually the case with allopathic practice, or we may direct, modify, intensify, and accelerate them, as is the legitimate province of hydropathic practice. But we must confine to the perisocratic proposition, that the symptoms of disease are the evidences of restorative effort; the effort, however, may be unequal to the end in view, and hence the powers of nature are to be assisted by remedial agencies, directing irritations, etc.

To place this subject in a stronger, and perhaps clearer light, let us imagine that before our eyes stands an invalid, laboring under a complication of serious diseases, having also "suffered many things of many physicians," and that by some clairvoyant or other kind of vision, we can see through him. What do we discover? The whole mass of blood is thick, dark, viscid, and loaded with bilious particles; the

liver is inflated and torpid, and secretes but little bile, and that bile remains so long in the biliary passages that it becomes partially decomposed, and, to some extent, putrescent and acrid; and where it enters the duodenum, it corrodes its mucous surface; the stomach has been so long galled with incessant living, that its vessels are red, inflamed, and its secretion of gastric juice almost entirely suspended; the colon or large bowel is clogged up with hardened fecal matters, and the rectum or lower bowel is full of hemorrhoidal tumors; the mucous membrane of the throat and mouth is covered with an erythematous eruption, and the nerves of the tongue and palate are semi-paralytic; the skin is livid, rough, and eruptive; its capillary vessels over-distended with thick blood, and its pores clogged up with dead, effete matters; from the deficient external capillary circulation the internal vessels are overstimulated and engorged; the heart labors, throbs, and flutters; the lungs are so oppressed they cannot expand freely, and the system is not sufficiently deoxygenized; the kidneys are distended, overfilled, and their secretion imperfect, high-colored, and full of sediment; and last, though not least, the brain is constantly pressed upon by the current of venous blood which is there dammed up, as it were, by the general obstruction, producing vertigo, headache, and a thousand insupportable morbid sensations, &c., &c.

Such is not an overdrawn picture of a large proportion of Water-Cure morbid. Now, what happens under treatment? The first effect of the water process is to relieve the more prominent, yet more external, and less important of the symptoms, as marked heat, inflammatory action, pain, irritability, pyrexia, fever, inflammation, sense of general oppression, &c.; this is usually accomplished within four weeks, and the patient feels a newness of life; his spirits become buoyant, his step more elastic, and he experiences a sort of general bodily exhilaration; but, like the marred and marred sailing, which has been beat to the ground, and rises up again when the superincumbent pressure is removed, he has wounds and bruises to heal. During the treatment, changes have been going on in all the machinery of vitality; obstructions have been more or less cleared away; torpid vessels started to action; long-dormant sensibilities stirred up in half-paralyzed nerves; the excitability of the contractile tissues re-developed; universal excitation has pervaded the domain of organic life.

In this state of general perturbation, when some parts and organs are overcharged with blood, and others bloodless—some inflamed, and others torpid—some excessively irritable, and others almost paralytic—some preternaturally sensitive, and others almost devoid of sensation—some oppressed with heat, and others oppressed by cold—with impure

secretions in many organs, and extraneous sources choking up the capillary vessels more or less in the different structures, it may well be supposed that the *vita medicatrix nature* would present every phase of irregular and disorderly action; sometimes concentrating the whole remedial effort in one direction or to one outlet; sometimes dividing it between several parts, and sometimes making it, with more or less force, successively in various directions.

These efforts are attended with waste or expenditure of organic force, and sometimes this expenditure for a time exceeds the replenishment; hence "reaction," as it is called, fails, and the patient feels a temporary depression, in which condition he is very apt to imagine the treatment "does not agree with his constitution." Now it is that the faith and skill of the patient and physician are put to the severest test. If the patient now takes his feelings for his guide, and abandons all treatment, he may commit a fatal error for himself, and give the whole water-system a bad name; and if the physician perseveres in the use of very strong ingredients or very cold treatment, this temporary depression may become permanent, or, at least, unconsciously painful and protracted. All the patient requires is rest, soothing appliances, and encouragement. If he feels very weak, let him follow his feelings in the matter of exercise; walk, sit, or keep bed as previously as he can best enjoy or endure himself. If he is feverish, chilly, or in pain, administer local sensations, or the warm or hot bath. In brief, he needs an expectant, nursing management until the organic powers have thoroughly rested themselves, and in three, six, or ten days, more or less, full treatment may be resumed to advantage.

If, where disease and disorganization have pervaded a large extent of the domain of life, these efforts, and these riskings, these ground or partial crises, these "ups and downs" may be many before health is re-established; and the physician who undertakes specifically to promote a crisis, with the view of curing, as it were, at a single dash, commits a grave mistake. Crises, or any number of critical efforts or disturbances, are always to be desired, but never to be sought by violence.

It often happens that patients whose bodies are extensively diseased, yet not very much exhausted in muscular power, experience very great benefit at a Water-Cure during the first month, after which they suffer a slight aggravation of many of their difficulties, and then remain several months apparently in statu quo, not resting within themselves, or equanimity externally, any decided indications of restoration, and yet in a few months longer find themselves in good health. Such cases, of which I have seen many, prove to us that the process of repara-



tion, in the domain of the organic economy, like that of growth and development, is slow, silent, gradual, and almost imperceptible, and thus, although we may rid the system of obstructions, morbid deposits, and acute disease by the diligent employment of the Water-Cure processes, the re-establishment of firm and vigorous health requires weeks, months, or years, and is influenced favorably or adversely by every circumstance and habit of life.

## CHAPTER IV.

### OF THE PULSE.

**NATURE OF THE PULSE.**—All persons who undertake the general direction of hydropathic appliances, ought to be familiar with the character and indications of the arterial pulsation. There is no surer test of the degree of existing vitality, or of the balance of circulation, and no better guide for the administration of water-treatment; while its variations denote, with considerable certainty, many pathological conditions of the different organs and systems of the vital domain. For these reasons, this chapter may properly form a connecting link between the theoretical and practical departments of this work.

The beating of the arteries, caused by the influx of blood propelled through them by the contractions of the heart, is called the pulse. Its characters relate to the force, frequency, strength, and equality of the pulsations themselves, and of their intervals. The most convenient method of ascertaining the state of the pulse is by compressing the radial artery at the wrist, with the balls of the first and second fingers; the main force is to be applied by the finger which presses on the artery *above*, or toward the heart. Its strength is determined by the degree of compression it will bear before it will cease to be felt by the finger *farthest* from the heart.

**VARIETIES OF PULSE.**—Medical authors enumerate many kinds of pulse, which are both fanciful and useless. All the distinctions which are of practical utility are the following:

The pulse is called *regular* when its beats are uniform in force, frequency, fullness, &c., and *irregular* when it lacks uniformity in these respects.

A normally strong pulse resists moderate, yet yields readily to severe pressure.

A pathologically strong pulse is almost incompressible. A strong pulse is never very frequent, rarely exceeding 80, and never, perhaps, 90.

A hard pulse offers nearly as great resistance at first as a strong pulse, but yields more easily and completely to strong pressure.

A soft pulse feels full and round to the finger, but yields steadily and readily to pressure.

A full pulse gives to the finger the sensation of repulsion or billiousness.

A contracted pulse is nearly the opposite of the full pulse, the pulsations being narrow, deep, and somewhat hard.

A frequent pulse has an unusual number of strokes in a given time. The natural frequency of the pulse at the various stages of life is subject to considerable diversity. The average may be stated as follows: In the embryo, 120; at birth, 120; one month, 124; one year, 112; two years, 105; three years, 100; seven years, 90; twelve years, 85; puberty, 80; adult age, 70; old age, 65.

A slow pulse makes less than the usual number of strokes in a given time.

A quick pulse is one which strikes sharply and suddenly, as it were, against the finger without reference to the number of pulsations; hence it may be quick and frequent, or quick and slow. A quick pulse is never very frequent, seldom over 90.

The pulse is said to be *tense* when the artery resembles a cord fixed at each extremity; when it feels still harder and smaller, it is called *string*.

A *sluggish* pulse is that which cannot be felt without difficulty or without strong pressure.

A *tremulous* pulse is one wherein each pulsation oscillates.

A *weak or feeble* pulse beats lightly against the finger, causing entirely no very slight compression.

A *small* pulse makes the character of the weak or feeble with the contracted pulse.

A *sharp* pulse is a combination of the quick and frequent; the artery strikes the finger both abruptly and rapidly.

The pulse is called *critical* when it becomes free, open, soft, &c., after having been irregular or abnormal in those respects.

The *double or double* pulse is that in which the finger is struck twice at each contraction of the heart: once lightly and once more forcibly.

An *intermittent* pulse is that in which a beat is occasionally missed

as it were; the intermissions are usually quite irregular, as one is five, six, ten, or twenty.

There are many technical descriptions of pulse, which are either unimportant, or merely subdivisions of those already named, as, *crisis*, when the artery seems to raise itself to a point in order to strike the finger; *post-tup*, an imperfect dilatation of the artery, being succeeded by a fuller and stronger one—the artery seems to leap, as it were; *convulsive*, unequally frequent, or unequally hard; *deficient*, a feeble beat, which seems every instant about to cease; *depressed*, a pulse both weak and contracted, or deep; *sluggish*, resembling a farrow, slightly vibrating; *fiskering*, i. e., *deficient*; *lentic*, the weak, feeble pulse observed in hectic fever; *intercurrent*, one in which a superfluous pulsation seems to occur occasionally; *intricate*, unequally slow and imperfectly developed; *jarring*, jerking and sharp; *languid*, slow and feeble; *large*, an open and full beat; *long*, one which strikes the finger to a great extent in length; *low*, the pulsation scarcely perceptible; *rolling*, slightly tense or hard; *undulating*, the pulsation resembling the motion of waves; *unequal*, the pulsations being unlike, or returning at unequal intervals; *vermicular*, resembling the motion of a worm; *vibrating*, jarring, like the motion of a tautened string; *compressed*, small, contracted, and slow; *laboring*, the blood seeming to be but partially emptied at each pulsation, etc.

**INDICATIONS OF THE PULSE.**—The preternaturally strong pulse is characteristic of high fevers and active inflammations. It is the kind of pulse which is said to *bear bleeding well*; bleeding does not immediately or sensibly prostrate the patient; but when relieved pain and lessens morbidity. When this pulse exists, no matter by what name the disease is called, the cold ablutum or wet sheet may be freely employed and safely continued until the pulse is reduced to the natural standard.

The *hard* pulse indicates a less degree of inflammatory action, or a great degree of irritability, without great debility. It is found in many forms of acute and sub-acute inflammation, as gonorrhoea, pneumonia, in the form of continued fever called *typhoid*; in many cases of what is called *bilious remittent fever*, in the early stages of intermittent fever, during the hot stage of the paroxysm, and generally in the early stages of the exanthemas—measles, small-pox, scarlatina, erysipelas, &c. Bleeding renders it softer for a few hours, but, unless the cause is removed by some other means, the hardness soon returns. Cold application may be employed under the same restrictions as for the strong pulse.

The *soft pulse* is always found in the normal state of the circulation, and sometimes attends diseases which are not marked by active inflammation, nor much debility. Bleeding always strikes this to a weak, contracted pulse. In water-breast and cold applications are most beneficial.

The *full pulse* indicates a good degree of superficial capillary circulation. Bleeding always permanently depresses this kind of pulse; but cold applications are generally very well borne. It is generally found in apoplexy, the hot stage of fevers, the incipient stage of pulmonary consumption, &c.

The *contracted pulse* indicates capillary obstruction and intense engorgement. Epidemic cholera affords an extreme example of this kind of pulse. It often "runs" on bleeding, to sink more deeply soon after.

The *frequent pulse* indicates irritation or inflammation, and often very frequent great debility. Irritable temperaments manifest a more frequent pulse than the phlegmatic; and females have a more rapid pulsation than males. A frequent pulse may be strong up to about 90 per minute; but beyond that point debility is generally proportioned to the frequency. In complicated affections of the thoracic and abdominal viscera, the frequency of the pulse is an important indication of the locality of the principal morbid coalition. Thus, in dyspeptic consumption—an affection which commences with a diseased liver and stomach, and ends with tubercles or abscess in the lungs—the pulse will be moderately slow while the abdomen is the principal seat of disease; it will gradually increase in frequency, as the disease extends itself to and occupies the lungs; and be very frequent when the viscera of the chest have become the most dangerously affected. Nothing is more common than for experienced physicians to make the most egregious mistakes in diagnosing between diseases of the liver and lungs, or between dyspepsia and consumption; but the frequency of the pulse, aided by other symptoms, might always to secure a correct diagnosis. The importance of this symptom is enhanced by the fact, that in most chronic diseases of the abdominal viscera, the pulse is preternaturally slow; while in all aliothetic affections of the chest it is more or less preternaturally frequent. In those dyspeptic affections or disorders of the liver, attended with a dry, husky cough, a mucous secretion of the throat, or a glutinous mucous expectoration from the lungs, there is always danger of confirmed consumption when the pulse begins to beat with considerable frequency, say from 50 to 100.

The *slow pulse* indicates torpor, inaction, especially in the functions



anxiety to digest. Compression of the brach, from tumours, or effusion, or engorgement, not unfrequently produces a very slow pulse. Dyspeptics and hypochondriacs often manifest an extremely slow pulse. In all of the above cases the pulse frequently sinks to 50, and occasionally to 40. A change in dietary habits, if it be from highly-seasoned, stimulating, or animal foods, to plain, simple, vegetable dishes, is always accompanied with a reduction in the frequency of the pulse. The long and slender arteries of tall and slim individuals beat less frequently than the shorter, thicker vessels of an opposite organization.

The *quick pulse* is similar in its indications to the *hard pulse*; but usually denotes a greater degree of irritation or inflammation.

The *scarc pulse* denotes excessive irritation with considerable debility. It is usually found in excitations which possess great activity with little strength.

The *deep pulse* is merely owing to the situation of the artery, which may deeper beneath the integument than usual.

The *tremulous pulse* indicates extreme nervous debility with violent irritation, or excessive internal congestion. Tea, snuff, alcoholic beverages, and opium are among its common causes.

The *weak or feeble pulse* indicates debility merely.

The *small pulse* denotes debility with more or less heat irritation.

The *slary pulse* indicates more or less debility with great irritation.

The *critical pulse* denotes the subsidence of irritation; a more perfect equilibrium in the circulation, and a general improvement in the patient's condition.

The *double pulse* usually attends organic affections of the heart or large arteries; yet it is sometimes found in very nervous dyspeptics, especially those who have indulged freely in nervines and anastics, as coffee and tobacco.

The *intermittent pulse* is extremely common with dyspeptics, nervous neuralgic, sedentary persons, and those who are subject to constipation, and also with old persons. It not unfrequently occasions great alarm, being erroneously supposed to indicate aneurism, heart disease, or some other formidable and fatal malady. It indicates thick, viscid blood, capillary obstruction, or nervous exhaustion. Overloading a weak stomach, almost always produces an intermittent pulse for a time, as do right suppers, and going to bed soon after eating.

The sub-varieties of pulse indicate complications of the conditions which give rise to the more distinct varieties, and are attributable to constitutional peculiarities, personal habits, local irritations, and many other circumstances relative to the individual, the disease, and the treatment.

## PART V.

## PATHOLOGY AND THERAPEUTICS.

## CHAPTER I.

## OF FEVERS.

CLASSIFICATION OF FEVERS.—THE zoological arrangements of fevers, as found in medical books, are all, in my judgment, unsatisfactory and absurd. Without wasting any of my limited space in exposing their errors, I will at once propose a classification which shall, at least, make a wiser approximation to pathological propriety.

*Zoological Arrangement of the Simple Fevers.*

Simple Fevers.	1. Ephemeral.—One day Fever.		
	2. Typhoid.	Yellow Fever. Nervous Fever. Putrid Fever.	Ship Fever. Spotted Fever. Camp Fever. Jail Fever. Hospital Fever.
	4. Remittent.	Nervous Remittent. Putrid Remittent.	Marsh Fever.
	5. Intermittent.	Quotidian—Everyday Ague. Tertian—Third day Ague. Quartan—Fourth day Ague.	
	6. Symptomatic.	Hectic Fever. Puerperal Fever. Miasmatic Fever. Milk Fever.	
	7. Eruptive.	Small-pox. Chicken-pox. Cure-pox. Measles. Scarlatina. Erysipelas. Miliaria. Purpura.	

From this arrangement I have excluded the "bilious fever" and the "typhoid," or "mixed fever" of authors. A mild form of the putrid typhus, when accompanied with bile in the stomach, and a yellowish excretion, is often called bilious fever; so, also, is either form of remittent. The "synochus" is said by some writers to be bilious in the beginning, and typhus in the end. This is simply absurd. Other authors designate it inflammatory at the onset, leading to a typhoid termination. This is mistaking an approximation of symptoms for a change of type. Bystanders are often astonished at the bedside of the patient by hearing the physician announce that the fever has changed type, from bilious or inflammatory, to typhus or typhoid. All this I regard as sheer nonsense. All that it can mean in plain English is, the patient is worse, or has approached the critical period or turn of the fever.

The "congestive fever," as it is generally called in our Southern and Western states, is merely a severe form of intermittent or remittent, attended with the symptoms of a disproportionate engorgement of the liver or lungs. Sometimes a malignant form of typhus is called congestive fever, and occasionally almost all forms of fever, unaccompanied with severe congestion of some important viscus, are designated by this misleading term. European authors have entitled similar cases "pernicious fevers," by way of distinction: a more unsmooth and senseless appellation than congestive.

Doctor William Jenner, professor of pathology in University College (Bootham's *Rechners*, Part XXIII.), has lately classified continued fevers into typhoid, typhus, relapsing, and febricula. The "relapsing fever," we are told, is known by a reproduction of most of the febrile symptoms is about a week after the patient has become convalescent. He is then, without any apparent exciting cause, without any error or indiscretion on his part, reattacked with violent fever, which lasts several days, and then terminates in profuse perspiration. A more appropriate name for this febrile disturbance is *drug-fever*. It is perfectly clear to my mind that, after the patient's body has been saturated, as it were, with drugs, as in the ordinary treatment of a fever, the vital powers will endeavor to get rid of the drug-medicines as soon as they have recovered sufficient energy to make the effort; and this effort is what Dr. Jenner distinguishes as a distinct species of fever, which he calls "relapsing," and treats with another course of drugging.

This explanation is confirmed, if not demonstrated, by the fact that the patients whose fevers are treated hydropathically, never have a relapsing repetition of the fever, nor any thing like it.

**GENERAL CHARACTER OF FEVER.**—A fever is a simultaneous abnormal disturbance of at least in all of the bodily functions, such disturbance being manifested in periodical paroxysms, more or less severe and permanent, of cold, hot, and sweating stages.

It coincides with fatigue, lassitude, and general disquiet, followed by shivering, rigors, or chills, then succeeded by hot flashes over the surface, with burning sensations at various parts of the body, particularly about the head of the face. Finally a postmortal heat, redness, and hyperæmic persudes the whole body, accompanied with heat, thirst, hurried tongue, frequent pulse, deficient secretions, and prostration of strength. Soon or later the superficial heat and redness partially or totally subside, and the paroxysm is terminated with more or less general or local sweating. Either stage of the paroxysm may be disproportionately severe, and either may be so slight as to escape notice.

**CAUSES OF FEVER.**—It would be a profitless waste of words to enumerate specifically all the circumstances which are supposed to be among the predisposing and exciting causes of fever. In a general sense they may be summed up very briefly: local contagion or poison, miasmatic food, impure water, staled air, personal uncleanness, over-exertion, atmospheric vicissitudes, gluttony, intemperance, &c.

Medical books are full of amazing specimens of thoughtless statements on this prolific subject. Thus Huxton, in his "Physician's Vade-Mecum, with Improvements by Gay and Stewart," gives us the predisposing causes of exanthematic fever in the following words: "Peculiar habit of body, with a strong muscular system; a good and well-regulated constitution!" If muscular strength and a good constitution predispose us to disease, it is certainly very dangerous to have good health! The same author gives us, as among the predisposing causes of yellow fever, "the male sex," and among those of miliary fever, "the female sex!" It is of such stuff that many medical books are made. I only marvel that some transcendental genius has not recorded human nature as a predisposing cause of disease!

**TREATMENT OF FEVER.**—Since medicine became a system—a never was a science—theories of fever have, more than any other subject, displayed the genius of the great ministers of the profession. The very names of all the different cases that have been written, would fill a volume; yet, in this day, we have in our medical schools no generally-recognized theory. All is now as vague, indefinite, and unsatisfactory



we is "the dark ages;" and the existing opinions of living authors regarding the nature of fever, are speculations of the most chimerical character.

Still, the whole subject seems simple enough. The reason why an explanation has never been found is, I apprehend, because it has never been sought in the right direction. A man who should look to the cause of his illness in search of the "philosopher's stone," might not discover it though lying at his feet. Medical philosophers, instead of seriously testing the effects of various living and altered hygienic agencies, have expended means of midnight oil and confusion of brain labor in trying to *think out* some specific, strange, hidden, occult, mysterious, extra-natural thing, substance, element, or cause, whose existence should, in some magical manner, account for all the phenomena of fever. Of course, all their toil has been in vain. It has been rather worse than labor lost, for the writings and teachings of medical books and medical schools are so fastened and crystallized with the notions of medical professors, that the student of medicine is equally certain to get his mind more or less beggled, and his judgment to some extent warped by their influence.

**TYPE OF FEVER.**—A man of strong, vigorous constitution, accustomed to an active out-door life, yet regardless of bodily habits, eating and drinking what comes in his way, as is the fashion of the world, is exposed to annual cold, wet, heat, labor, or some similar vicissitude. In a day or two he has a fever. Its type will be *effluviatory*, because his vital energies are strong and his viscera powerful, and in his nature—the organic instinct of self-preservation—is successful in throwing the morbid action to the surface. If the deranging causes are slight, it will be ephemeral in duration; if more severe, typhoid.

Another man, of feeble constitution and sedentary life, is similarly exposed and similarly attacked. His fever will be *typhoid*. There is less ability to react successfully, and the internal fermentation is proportionately greater. The surface is less caught, but the viscera suffer more internally. The brain manifests delirium, the lungs engorge with, the liver congests, the stomach and bowels torpor or relaxation, and some physicians will call it *congestive fever*.

If either of the above patients has been gross in his eating habits; if pork, butter, sweetmeats, cheese, and fine, condimented, farinaceous food have constituted a large proportion of his diet, he will have a yellow tongue, bitter taste in the mouth, bile in the stomach, &c. Then his fever may be called *bilious*.

The man of impaired constitution and weak digestive powers, who

is attacked with typhoid fever, will have the *typhoid* form, if his brain and nervous system have been particularly abused, overworked, or diseased by tea, coffee, liquor, or tobacco, and the *putrid* form if his personal and dietetic habits are gross, and particularly constipating and obstructing.

The yellow variety is produced by causes which especially operate to impair the secretions of the liver, as extensive heat, animal or vegetable matters, combined with gross diet and stimulating drinks. Every kind of animal food, except, perhaps, milk, is very warm in nature, I regard as a predisposing cause of yellow fever.

The other forms of typhus, called *ship*, *spotted*, *jaund*, *croup*, and *hospital* fevers, are nothing more nor less than the *typhoid* or *typhoid* fever, modified by local causes and particular personal habits.

*Remittent* fever may be of the nervous or putrid tendency, for the reasons already assigned. Its remittent character is owing evidently to a decomposition of the liver and spleen, a condition of obstruction and exasperation produced by nervous effluvia, or any impurities from decaying vegetable and animal matters, to which the system has been for a long time exposed.

*Intermittent* fever is the result of the same causes operating more gradually, that is, in less force, and for a longer time. The periodicity of the paroxysms may be inferred in part to organic laws and in part to constitutional peculiarities. This view of remittent and intermittent fevers is confirmed by the fact that enlargements and indurations of the large glandular structures, the liver, spleen, and pancreas, are most frequent in those who have been the subjects of protracted agues.

*Syphilitic* fevers are merely states of constitutional irritation from local causes, generally chronic syphilitic inflammation. *Typhoid* fever is a general fibrile disturbance from tubercles or abscesses of the lungs. *Purulent* fever is a consequence of inflammation of some one or more of the abdominal or pelvic viscera or appendages, generally peritoneal inflammation after childbirth. *Malarious* fever arises from worms, indigestible food, &c. *Milk* fever is occasioned by an inflammatory state of the female breast.

*Erysipelas* fevers are characterized by an accompanying rash, effluence, eruption, or pustular affection of the skin. They are generally contagious, and depend on a *specific* virus which works through the blood like a ferment. The peculiar *modus operandi* by which the infectious element is first produced cannot be precisely explained; yet the principle or law of its generation and operation is sufficiently obvious. Vegetable ferment, called yeast, as is known is produced from decomposition of vegetable matter. This is in reality a rising process

by which certain preformed principles are decomposed and so rearranged as to constitute an entirely new product. The new product, of course, holds an unphysiological scale of chemical affinities in relation to the constituents of the healthy fluid, and hence when brought into contact with these fluids, another set of chemical actions, decompositions, and recombinations takes place, by which some element is changed, modified, or destroyed.

We know, too, that when animal secretions or excretions are in a certain decomposing state, which is exactly analogous to vegetable fermentation, they will, by being brought into contact with the blood of a healthy person, produce more or less of a similar change by decomposition in its elements. Poisoning from dysentery is a familiar illustration. Personal diseases, combined with foul and unclean food, will develop an infectious matter and disease the structures, and by contact, communicate a similar morbid action to another in comparative health, as the horrible story of prostitution in cities can tell. We can then easily understand the law which develops infection of all kinds, if we cannot detect its chemical nature; and for all practical purposes, a knowledge of the law is sufficient.

All large collections of rotting or decaying vegetable and animal substances engender the poisonous ferment of contagious and other fevers; and if we look over the whole surface of the globe, we can easily find sources enough to account for all the infection, whose results are manifested in periodical, malignant, and contagious fevers, dysentery, cholera, etc. Thousands of human bodies, and the carcasses of beasts, lie rotting on the battle-fields of this blood-stained earth, from which currents of deadly virus are borne by the winds to infect the breath and blood of people at a distance of hundreds and thousands of miles; the graveyards and cemeteries of all large cities are constantly sending forth streams of death in all directions; and hardly a country place can be found where there are not local sources of this deadly ferment in the shape of hog-pens, dairies, slaughter-houses, etc. And when the infectious ferment is once produced, it has the power of propagating itself whenever it can find congenial elements in the fluids of our bodies, our only defence being vigorous functions and pure blood—good health.

**RATIONALE OF FEVER.**—The living organism is endowed with the inherent power of self-preservation. Each organ or portion to a certain extent, resists all noxious influences, and expels all noxious materials from the body through the various excretories. If the causes of disease—all of which may be strung up under the heads of impure or

obstructing materials, and exhausted nervous power—diminish the depurating power of the skin, the liver, bowels, kidneys, and lungs, increase their labors to keep the body pure. If the liver becomes clogged up the lungs, skin, bowels, and kidneys undertake the office of the injured organ. If the kidneys are injured functionally, the skin, lungs, etc., have an augmented duty. But the causes of disease often operate and increase so gradually that all the excretory functions are impaired. Hence the effort to relieve the system must be general—universal correction takes place. Some organs were originally stronger than others; some have been more injured than others by bad habits or previous diseases; hence the struggle will not be equally balanced. Though all the vital energies co-operate in the "effort of nature," they will act with irregular and unequal energy. The whole vital machinery is thrown into disorder. There is a fever. The kind of fever depends on the circumstances already adverted to.

But alternate action and repose is a general, universal law of the natural economy. After the organism has prepared itself for the remedial and expulsive effort (the cold stage), the vital instincts (its *modificative nature*) direct their whole energies to the surface (the reaction or hot stage), as the best channel of purification. At length fatigue ensues, and repose must and will be had. The next states, the heart's action becomes weaker, the sanguiferous tubules, and the collapse, or sweating stage, constitutes the paroxysm.

If the morbid cause were slight in intensity, and the morbid material small in quantity, the stage struggle may have sufficed to set the vital "house in order." Then the paroxysm will not be renewed. Otherwise it will be repeated again and again, until "victory or death" results.

If this view of fever is right, the drug-system of treatment must be wrong. Instead of "aiding and assisting nature," it tends to weaken her efforts, and while with other extraneous agents for the vital powers to contend against.

But it may be asked, by way of objection to the treatment I shall advocate: Why, then, if the paroxysm of fever is a remedial effort, do you denude this effort with your cold, or tepid, or hot-water processes? Why cool the hot stage of a fever with cold bathing, and object to cooling it by cold bleeding and cold drugging? I answer: The sagacious business are true to nature; they are infallible in the matter of mere evidence. But they are not intelligent; they are not reasoning entities. If the stomach is attacked with a poison, say a "blue pill" or a glass of gin, it will be true to itself, and yet be enabled to pass the offending agents off to the liver or the skin. If the



bloods are attacked with a portion of epinephrine, or a dose of "No. 6," they will either pass it off readily, or, failing in that, pour out serum to defend themselves. If the circulating fluids are charged with animal oils, the capillary vessels will deposit it in the cellular tissues. All these particular functions act also for the general good; but while each and every function participates in a general way in the preservation of the whole domain of life, each organ has its own special law of self-preservation. Hence when all the organs are struggling to relieve themselves, disorder, and rust, and excess may result. And here right reason may come to the aid of instinct by supplying favorable conditions, as perverted judgment has brought the trouble about by forcing unnatural conditions upon the organism. By all those means which lighten those efforts of nature to maintain or obtain the circumstances which constitute the normal state, without calling out a further expenditure of vital power, nor adding still other noxious agents, nor chemically injuring the structures, we may truly practice "the healing art."

**CAUSE OF FEVER.**—Since the days of Hippocrates, the opinion has prevailed that fevers naturally, if left to themselves, evince a tendency to run a certain course, and terminate in a given time by a sudden aggravation of the symptoms, called *sinking*, or a complete subsidence of them, and the commencement of convalescence. This change has been called the *crisis*, and the days on which it occurs, *critical days*. The 3, 5, 7, 9, 11, 13, 15, and 20, have been regarded as critical days. Because of this *boundary*, many drug-authors are opposed to all attempts to break up the disease or shorten its course. Their plan is to conduct it through its course; but how do they propose to conduct it through its course? Why, by poisoning the body through and through, with course after course of drugs! There is nothing known to civilization more thoroughly barbarian than the drug-treatment of a fever.

The subject of crises in acute diseases is of no practical consequence whatever. Under water-treatment, the only crisis observable is the cure. Crises proper, under hydropathic management, are known only in chronic diseases, and in these neither crises nor cures are scarcely known in allopathic practice.

**DURATION OF FEVER.**—The ordinary duration of inflammatory fever is from one to two weeks; the nervous form of typhoid, from ten to six, or even eight weeks; the putrid form from two to three weeks; remittent fever from two to four weeks, when treated according to the popular system. Intermittent fever is often "broken" in a few days,

but seldom cured, and generally recurs at uncertain intervals for months or years. Epidemical fever is frequently converted, by one trifling dose, or a severe bleeding, into a protracted fever which runs several days or weeks. Under water-treatment it is very rare for any fevers, except the eruptive, to hold out over a week; and is eruptive diseases, whose febrile excitement usually continues from seven to eleven days, the violence of the disease is generally entirely subdued within one week. I have never yet personally known a fever run over a week under water-treatment, and I have treated all the epidemic forms in New York city for the last seven or eight years—epidemic inflammatory, typhus, ship, scarlet, measles, small-pox, &c.

GENERAL TREATMENT OF FEVER.—The indications are: 1. To equalize the circulation. 2. To purify the body. Practically these functions may be more nice than wise; for all the means best calculated to fulfill one indication are also the best adapted to the other.

Bathing.—Nothing in the way of medicine is more beautifully simple and promptly successful than the hydropathic management of a fever. The temperature of the body is the sure and invariable guide for the whole process. If the whole surface of the body is hot, cold water is to be applied by frequent ablutions, or the rubbing wet sheet, or the wet-sheet pack, and often repeated until the temperature is reduced to the natural standard. The pack is the most pleasant and most effectual process, and its soothing and transpiring effects upon the whole nervous system far exceed all the opiates in the world. If the temperature rises again, the processes are to be repeated in the same manner. If the feet are cold, they should be held in hot water a few minutes, or a bottle of hot water may be applied to them. Especial attention must be given to warming the feet in all cases where the head is oppressed and the lower extremities are inclined to be cold. In what are called low or nervous fevers, there is often great heat and irritation of the head, and great torpor, coldness, or numbness of the lower limbs. In these cases it is indispensable to balance the circulation by cold applications to the head and hot to the feet before resorting to the wet sheet. In very low fevers, and in all cases attended with extreme prostration and lowered temperature of the entire, frequently sponging the body with tepid water, is better than the wet-sheet pack, or very cold ablutions, for the reason that the shock of the latter tends still more to disturb the equilibrium of the circulation. Local pains, spasms, &c., are to be relieved by cold applications or warm flannel-baths, or either feels most grateful. As a general rule, cold compresses are most beneficial when there is constant heat, tender-

ness, and distention; and warm applications are indicated when the distress is periodic or spasmodic, or when accompanied with heat, tumescence, or soreness. Severe headaches may be generally relieved by cold wet cloths, and always readily subdued by pouring cold water over the temples and back part of the head for several minutes. This process will also generally relieve the severest retching, nausea, and vomiting.

I have never tried the process of immersion in treating fevers, but have every confidence that it would prove eminently efficacious in all high fevers—fevers attended with uniform and general heat of the surface, and a strong, hard pulse.

There is now living in a secluded town in Missouri an old farmer, who has practiced Water-Cure even longer than Ponsoldt. A communication from him, addressed to the publishers of the Water-Cure Journal, will occupy two or three pages with as valuable matter as I could select from any source whatever; and, notwithstanding the author modestly desires to have some other name take the credit of giving his experience to the world, I shall take the liberty to record his name, and present his letter in his own farmer-like and unaffected simplicity of style and language:

"EAST FRANKLIN, MISSOURI Co., Mo., Nov. 28, 1856.

"MERRILL, FOWLER AND WELLS:

"I am a farmer, in my seventy-fifth year. I have taken your Journal since January last, and have taken Wilson & Co.'s little Dispatch for two or three years, and have always sent to him for any books he advertised on the subject of the Water-Cure, with the request that he would send me the best and cheapest he could procure. I think I have seen or sight of them, but in none of your Journals, nor in them, do I see where fevers have been treated with the success that I have treated them with for more than thirty years, and I have never failed in a single case to make a perfect cure in a few minutes. Strange as this may seem, it is nevertheless a fact, and this is the reason why I trouble you with these lines. I have no interest in deceiving you or any other person; and as for having my name published in your Journal as a great Water-Cure doctor, I wish you not to publish this, but give it to some person of your acquaintance in whom you have confidence, who will give it a fair trial, or so several, and if it succeeds, as I know it will, publish the fact in any person's name you please except mine.

"I have treated all fevers, fever and ague, etc., alike. My plan is simply to lache at the time the fever is the highest; if the fever has passed its highest point, and is going off, I let the patient alone until it

returns. I know nothing of wet sheets, bandages, &c.; but when the fever returns, or goes as high as I think it will go, I put the patient in a bath-tub that I keep for bathing. I have him go entirely under water, head and all, for three or four hours, keeping his head under such time as long as he can conveniently hold his breath; then let him draw it up to the chin until the heat is reduced to the natural temperature, and the patient feels comfortable; then let him come out and wipe dry with towels, put his clothes on, walk about, lie down, or do as his inclination leads; eat what he will, drink what he pleases; as for bathing, I do nothing of the kind. I pay no attention to the temperature of the water, the object being to bring the patient to the natural heat, and this can be done in fifteen or twenty minutes.

"When I have no convenience for bathing, and, in fact, sometimes, as a matter of preference, I pour water on the patient's head, instead of bathing; and, surprising as it may seem, this always has the same effect that bathing has, and I do not know that it takes longer to cool the body in this way than it does by bathing. I have the patient lie with the head over the edge or side of the bed, so that the water will not wet the bedding. I then get a bucket of the coldest water, place it under the head, and pour the water over the back of the head from one temple to the other, the patient lying with the face downward. I pour it on moderately, and at the height of the fever; I think it will have little effect if done at any other time. Pouring water on the head in this way will cool the whole body nearly or quite as soon as going all under water, as before directed. If the water is not poured on long enough at first, the fever will return in a few minutes, but repeat the pouring then as at first. I have known the fever return twice before it was finally driven away.

"The next day after the treatment the patient is capable of attending to business as usual, and I do not recollect a case in which the patient had another attack the same season. There is one thing I cannot understand—how pouring water on the head should relieve the stomach of bile; but so it is; let the patient be ever so sick at the stomach, and incline to vomit ever so much, in two minutes after you begin to pour water on the head, the stomach is relieved, and there is no more of that trouble. As before stated, the cure is completed in a few minutes, and it is a permanent cure, and a cure that all persons can perform at home without any inconvenience. The shortest time I have seen noted in any of your books to ease the fever and ague is five days, and that with your wet sheet, &c.; I am sure this plan is a great deal easier, and much quicker; and again, these books give no directions when to commence the treatment, which I am certain is a mis-



nal point. I am sure if my mode is not employed as directed, at the height of the fever, it will fail. As stated in the beginning, I am no doctor, neither did I make this discovery myself. I lived forty-two years on the Sciota bottom-lands, in Scioto county, Ohio, the most noted place for bilious complaints perhaps in the world. A physician who had attended my family, being about to move away, I asked him whom I should apply to after he was gone, in case of sickness. He then told me how to apply water in all cases of fever. I have now tried it more than thirty years, and have never failed.

"The effect the cold bath had on me last spring, in the worst dysentery I ever experienced, which I learned from Dr. Stern's Water Cure for the children, no person would believe. I could name a great many cases of different kinds of bowel complaints, which have been successfully treated with Water Cure; but it is a very smart undertaking for me to write a few lines, my hand is so unsteady, and I fear it will be a greater task still for you to read them. But I thought it was a duty I owed the community to make known my experience in the treatment of fevers with water, especially as there is considerable stir at this time about the Water-Cure. But I have feared that almost every-day in a hundred have been opposed to the application of cold water in any case whatever. The few who have tried the cure as directed, have never failed to get well speedily; yet, even they would almost always, on the next attack, apply to a drug-doctor. In the cases of small children, I have induced their mothers to hold them in a bucket or tub of water, and wet their heads continuously for five minutes. I have never known this fail to cure the child and fever; let it be done also when the fever is at the highest.

"I am respectfully yours, etc.,

"ABRAHAM MILLAR."

Since I have been in possession of the old farmer's experience, I have employed the pouring head bath more freely than ever before, and seem without decided benefit. I deem it a valuable auxiliary to the wet sheet in all high fevers; in low fevers it cannot be as promptly successful, yet may be very serviceable; but care must be taken to keep the lower extremities warm, lest its application should produce reaction toward the basis. It will not, of course, cure protracted agues which are complicated with enlargement of the liver or spleen, but may in those cases very much shorten the duration of the disease if employed according to Mr. Millar's directions.

There is another very simple and very efficacious method of treating an ordinary fever, which has the advantage of always being convenient,

and may, for this reason, be preferred by those who do not well understand the management of the wet sheet, or who have not convenience for the immersion or plunge-bath. Place the patient in a hip-bath—a common wash-tub—and two pails of water will answer; let the water be of a moderate temperature,  $62^{\circ}$  to  $70^{\circ}$ , and wash him all over the back and chest while in the tub; apply, also, several folds of linen to the head, wet in cold water, and changed very often until the head becomes cool, and if there is the least tendency to coldness of the feet—as there will be if there is great determination to the head—put them in a pail of warm water. The patient may remain in the bath five, ten, or fifteen minutes, if his strength permits. This process may be repeated as often as there is an exaggeration of the hot stage of the febrile paroxysm. When the patient is too weak to sit in the tub, the head and feet may be treated as just recommended, and the whole surface of the body frequently sponged with tepid water while the hot stage continues.

There are some cases of low nervous fevers wherein the heat is very irregularly developed—the pulse very small and weak, the head oppressed or giddy, with great tendency to faint on slight exertion. In these cases reaction is so feeble that the full pulse, so far from soothing the patient, increases the internal congestions, rigors, and local pains. Here the proper plan of treatment is to soak the feet occasionally in warm water, applying very cold compresses to the head at the same time; apply cold wet towels to the stomach, bowels, and loins whenever there is continuous heat and tenderness about those parts, and sponge the whole surface of the body over with tepid water frequently whenever there is general and uniform heat and dryness. Continue this plan until the fever is gradually and finally slated.

Water-drinking.—Water should always be taken freely when there is thirst; and when the heat and dryness of the surface is great, and the tongue parched, it should be taken as copiously as the stomach will bear without unpleasant distention, even though there be no distinct sensation of thirst. In this case it should be taken frequently, but in small quantities at a time.

The Enemas.—When the bowels are not entirely free, they should be moved by one or more tepid injections. This may be done either before or after the cooling processes have been employed. Subsequently injections are only required whenever a sense of fulness, hardness, distention, &c., of the abdomen indicates an accumulation of fecal matters, whether this condition occurs daily, or only once in two or three days. Indian or wheat-meal gruel promotes the action of the bowels, and for this purpose they may be taken to advantage when the condi-

ation is considerable. Emetics are rarely necessary; I never prescribe them, except there is evidence of crude ingesta recently taken into the stomach. In this case the patient should drink warm water until vomiting occurs, or relief is obtained without. Copious warm water-drinking will often relieve nausea and distress from offensive acids, acrid bile, or irritating secretions in the stomach and duodenum, even though it does not produce sickness or vomiting.

**Regimen.**—Of the importance of free ventilation, perfect cleanliness about the room, frequent changing of the bedding, and the prompt removal of all offensive dejections or excretions, I hardly need speak. Cleanliness ought to be a sufficient guide in this respect. But there is general error, committed by physicians and nurses, in the management of a fever, to which I wish to call especial attention. Wards of what the free access of air, many are inclined to diminish the light. This error is even prevalent, according to my observation, in the country that is the city. The patient is often kept in a room so darkly shaded that there is an uncomfortable feeling of darkness or chilliness within, especially when the room is opposite the sun side of the house, or the house thickly surrounded with trees and shrubbery. The influence of light is not only refreshing to the patient, but it tends, also, to decompose and dissipate putrescent or infectious particles which gather in the sick room. There may be cases where the eyes are so excessively irritable and tender to light that it is necessary to shade them, but this should be done by a green tulle or other eye-shade, while a good degree of light is admitted into the room. These remarks apply, of course, to natural or daylight, not artificial or lamp-light.

In relation to food and drink, the rule of practice is not difficult to remember. The patient should drink at all times to the full satisfaction of the sensation of thirst; although, as just observed, when thirst is violent it should be taken frequently in small quantities. Cold-water, cold-coffee, lemonade, apple tea, &c., are no better than pure water in any case; but as patients often have a craving for them, and as they are both grateful and harmless, I would never object to them. Food should not be taken at all until the violence of the fever is materially abated, and then very small quantities of the simplest food only should be permitted, as gruel, with a little toasted bread or crackers, boiled rice, mashed potatoes, baked apples, &c. There is not a more mischievous or more criminal error abroad in relation to the treatment of fever than the almost universal practice of stuffing the patient continually with unpalatable animal scraps, under the name of "solid, nourishing diet," beef tea, mutton broth, chick or soup, panada, &c. The fever will always start out before the patient is injured by stuff-

hence, at least under hydropathic treatment, and the appetite will always return when the system is capable of assimilating food.

**LOCAL COMPLICATIONS.**—Among the common incidents attending the progress of a fever treated in the ordinary drug way, are, excessive irritability of the stomach, vomiting, diarrhea, hemorrhages from the liver, bloated abdomen, or tympanitis, falling off of the hair, abscesses, boils, obstinate constipation, retention or suppression of urine, tropical inflammation, dropsical swellings, &c. Most of these complications are fugacious, and owe their existence entirely to drug medication, and are hence wholly unknown to the water-treatment. But in two are often called to patients who have been drugged, more or less, since the attack, we shall frequently have these incidents or accidents to manage. The stomach can generally be quieted by the free use of warm water, followed by bits of ice or sips of very cold water, and the cold compress externally. In a severe case apply also hot bottles to the feet and cold cloths to the head; and if the head be very hot pour cold water on it for several minutes, until it becomes perfectly cool. Diarrhea may be checked by the hot fomentation or warm hip-bath, followed by cool or cold injections. Hemorrhages require the cold compress, cool or cold injections, and bits of ice or frequent sips of very cold water, with the hot foot-bath. Tympanitis requires the same treatment, with occasional hot fomentations. Abscesses and boils need nothing but the wet compress. When the hair inclines to fall off it should be cut very short, and the head often wet with cold water, but not covered. Constipation is to be treated with tepid injections, as copiously as the urgency of the case demands. Difficult urination can generally be obtained by the fomentation or hot sitz-bath, or those followed by the cold compress, or a dash of cold water upon the pelvic region. In extreme cases the catheter must be employed. Tropical inflammations and dropsical swellings each require cold compresses frequently renewed.

**Relapses.**—I mention this subject only to contrast the condition of convalescent patients who have been through a course of allopathic drugging, with those who have had exclusive water-treatment. The former are always liable to relapses; the latter never.

**ESSENTIAL FEVERS.—FEBRILE ERUPTIONS.**—Some authors have distinguished this fever into three species, acute, mild, and remitting; but the distinction is of no practical utility.

**Diagnosis.**—Rigors slight, stages of short duration, mental faculties scarcely disturbed, terminating in a few hours in a moderate sweat.



The disease often disappears with a single paroxysm, and seldom exceeds two or three.

*Special Causes.*—A slight cold, an indigestible meal, a debauch, over-exercism.

*Peculiarities of Treatment.*—The wet-sheet pack for six hours, followed by the dripping-sheet, or cold ablation, or free injections, with fasting for twenty-four hours, will always remove this kind of fever.

*INFLAMMATORY FEVER—SYNOCHE.*—The terms *synocha* and *synochus* are employed quite promiscuously in medical books. Generally, however, a distinction is made, the former term being applied to what is usually denominated inflammatory fever, and the latter to a form of fever which is regarded as a compound of inflammatory and typhus—inflammatory is the commencement and typhus is the end. The truth is, these forms of fever are but different degrees in the violence of the same essential type, which may be called inflammatory or high fever, as contradistinguished to typhus or low fever.

*Diagnosis.*—This form of fever is rather peculiar to vigorous constitutions, and to persons of active, outdoor habits of life. It may be distinguished from all others by the following assemblage of symptoms: Tongue generally white with red edges; pulse full, hard, strong, and quick, though never very frequent. Temperature of the body uniformly high after the fever is fully developed; eyes reddish; eyes watery and high colored; the whole surface preternaturally flushed and turgid; the mental functions but slightly disturbed, or not at all.

If this fever runs much beyond the sixth day, or if it is mismanaged at the outset, the tongue becomes yellow, then brown, then black, and many symptoms of an original typhoid supervene. Like all continued fevers it is characterized by two exacerbations during the day; the first and mildest in the forenoon, and the second and severest toward evening.

*Peculiarities of Treatment.*—Of this fever it has been well said:—"The blood is on fire; extinguish the flame, and the patient will be well." The hydropathic treatment is more simple and direct than in any other form of fever. Wrap the patient in double wet sheets, slightly covered with bedding; let him remain as long as he is comparatively comfortable; then wash him off with cold water. Repeat the process as often as the febrile heat increases. The immersion with and pouring head-bath, as practiced by Mr. Miller, are peculiarly adapted to this form of fever. In fact, a sufficient quantity of cold water applied in almost any manner, will finally effect a cure. Usually the bowels are constipated in the outset; hence free injections of tepid water are necessary.

**YELLOW FEVER—TYPHUS INTERMITTENS—SYNCHUS INTERMITTENS.**—Yellow fever is generally regarded as peculiarly contagious, though, I think, quite erroneously. Some writers, among whom are Dr. Gould, have placed it among the venereal, on account of the peculiar eruptions which appear during its progress.

**Characteristics.**—Partial or general yellowness of the skin; passages somewhat irregular; great tenderness or pain about the epigastrium, or pit of the stomach; type irregular, which irregularity consists in a marked remission of the febrile symptoms, occurring during the first day or two, usually about forty-eight hours after their access. In severe cases the eyes are intensely red; there is extreme pain in the eyeballs, back, and limbs. The Mark usually, so alarming to friends and physicians, does not always take place, and when it does happen, I believe it is owing more to mal-medication than to all other causes combined.

**Particularities of Treatment.**—The excessive determination to the brain requires the constant application of the coldest wet cloths, or poulticed ice, to the pouring head-bath. The stomach is usually extremely irritable, and requires the cold compress. When retching or nausea is distressing, warm water should be freely drunk for a short time, followed by sips of cold water, or lime if use. The feet should also be placed in hot water for ten or ten minutes. The bowels are usually severely constipated, hence a succession of warm water injections should be promptly resorted to. The general treatment is the same as for infectious fever.

**NERVOUS FEVER—TYPHUS MORBIDUS.**—This has been called "wild typhus," "low typhus," and "slow fever." It usually runs from six to eight weeks under allopathic management. Some cases are attended with such prostration of the nervous system, that the patient either dials or becomes comatose in one or two weeks.

**Diagnosis.**—Great disturbance of the mental functions; defection of mind; frequent, weak, irregular pulse; tongue covered with a white, thick mucus; eyes suffused; heat of the surface more or less unequal; frequent bursts of uttering delirium; countenance peculiarly expressionless; the skin is liable to irregular dryness and sweats; the early symptoms are mild, and increase in violence gradually; the evacuations are not particularly offensive; the urine is copiously whey-like.

**Particularities of Treatment.**—In the nervous form of typhus, the indications are rather to equalize irregular temperature and action than to reduce excessive. In severe cases the external heat is so high and

uniform, as to call for the wet-sheet pack; but more frequently the modified heat is put up, as it were, in the head and epigastric region, while the extremities are colder of the normal temperature or cold. Under these circumstances, the expected plan of treatment, as it has been called, is the best. Apply cold applications to the head, cold wet towels, often changed, to the abdomen, and bathe the feet in warm water, or apply hot bottles to them; and whenever, under this management, the prostrated heat of the body becomes general, sponge the whole surface frequently with tepid water until the febrile heat subsides. Nausea, vomiting, and diarrhea are frequent incidents, and require the processes already frequently used for those symptoms.

**PUTRID FEVER—TYPHUS GRACILE.**—This is a more violent and malignant form of typhus than the preceding. Jail, camp, ship, hospital, and several other fevers, usually considered as distinct species, are but modifications of the putrid form of typhus, as influenced by local circumstances, and require no special pathological or therapeutic notice. The *spotted or petechial fever*, so called from purple spots appearing on the skin before death, has prevailed extensively in many parts of New England and New York since 1861. It has been very fatal, and was formerly designated *typhus syncipalis*, or *stomach typhus*. Medical books also make a useless and groundless distinction between typhus and typhoid fever, on the vague supposition that the latter has its seat more especially in a disease of the mesenteric and Peyer's glands. I reject this distinction as fanciful, if not puerile, and, as the reader will perceive, employ the terms typhus and typhoid indiscriminately.

**Diagnosis.**—Attack sudden; progress rapid; rigors severe; early and great prostration of strength; extreme anxiety and restlessness; the countenance is expressive of anguish and horror; pulse hard, but weak and rapid; tongue dry and brown or black; the skin imparts more or less of a peculiar stinging, prickling, or burning sensation to the touch; the breath is hot and offensive; there is ringing in the ears; throbbing of the temples; intense headache; ferocious redness of the eyes; the excretions of urine and feces are dark and offensive. In the advanced stage, spots or blotches appear on the skin from effused blood; burning pemphig, macula, vesicles, &c. There is great exhaustion of muscular power, and the face wears a fixed instead of a fixed look.

**Particulars of Treatment.**—Perfect quiet, and abundance of fresh, uncondensed air are indispensable. The bowels should be promptly moved by tepid injections, to be followed by enemata of cool water, to

act as a tonic. In the early stages of a majority of cases of putrid fever, the morbid heat is sufficiently developed and uniform to demand the wet-sheet pack frequently repeated; but it is generally necessary to apply hot bottles to the feet and cold compresses to the head at the same time. When the heat is too irregular, and the circulation too low for the full wet sheet, the abdomen should be frequently wrapped in wet towels, and the whole body very frequently sponged over with cool or cold water. In other respects, the rules already given are sufficient to regulate the treatment.

**REMITTENT FEVER.**—Remittent fever is distinguished from continued, by being attended with only one daily exacerbation of the febrile paroxysm, instead of two; there is also a greater remission of all the febrile symptoms at the end of the paroxysm, though this remission is not complete as it is in intermittent fever. The remittent type of fever is common to hot climates, but rare in the temperate. It is also especially prevalent in low, marshy districts, in the neighbourhood of stagnant waters, in the vicinity of lands occasionally inundated, and in localities where the atmosphere is loaded with the effluvia of decaying animal and vegetable matters. It is generally attended with great biliary disturbance, and in our southern and southwestern states it is often called "black remittent." Sometimes it is called "malignant remittent," because it more generally prevails in the autumn months.

The nervous and putrid forms of remittent are distinguished by the same symptoms which denote the same forms of typhoid fever: a general disproportionate disturbance of the nervous system marking the former, and all the evidences of putrescence and extreme exhaustion manifesting the latter.

All the general and special directions for treating the different forms of continued fever will equally apply to the same forms of remittent. It should be remarked that many cases of remittent fever—and the same is true of typhoid fever—do not, on their first access, exhibit distinctly either the nervous or putrid type, although they always conform more especially to one or the other as they progress. In all these cases, the character of the fever will approximate inflammatory, synochal, or high fever, and should be managed accordingly.

**INTERMITTENT FEVER.—AGUE AND FEVER.**—Fever and ague seems to be especially connected with excursions in and fistulous discharges of the liver and spleen. Enlarged livers and spleens, called ague cakes, are very common sequelæ of intermittents, although they are not unfrequently detected after protracted or repeated treat-



fevers. What are called "chill fever" and "dumb ague," are degraded or imperfectly-developed forms of intermittent. This disease is common to malarious localities and new countries, where decaying vegetation abounds, and places where the dense foliage and stagnant waters fill the air with carbonaceous and hydrogenous gases, are much more subject to it than those which have been longer under cultivation. It is very prevalent in many parts of our Western States; and with the bad living which helps to produce it, and the large doses of calomel, arsenic, and quinine given to cure it, a large proportion of those who "westward follow the star of empire," find their constitutions inevitably ruined.

*Diagnosis.*—The intermittent type of fever is readily distinguished by the history of the paroxysm, the regular succession of the cold, hot, and sweating stages, and the complete subsidence of all the febrile phenomena at the end of the sweating stage, this subsidence amounting to a periodical remission of the disease.

*Parasymptoms of Treatment.*—Intermittent fever exhibits a variety of forms, as—quadrilar ague, having an intermission about every twenty-four hours; trilar ague, the intermission about forty-eight hours; quilar ague, intermission about seventy-two hours: to which some authors add sub-varieties, called *irregular* and *complicated*. These distinctions do not affect the question of treatment. The bowels should be well cleansed with tepid injections, and when there is much nausea, or bitter taste in the mouth, a warm water emetic is advisable. The wet sheet, or the immersion, must be resorted to during the hot stage, and the pouring head-bath when there is great determination to the brain, with severe headache. During the intermission, a hot bath, followed by the cold dripping-sheet, or cold shower, will generally soothe the nervous system, and mitigate the severity of the succeeding paroxysm. As the liver is always in a state of greater or less congestion, the abdominal bandage should be worn constantly.

We find this disease under such diverse circumstances, and with so various complications, that there is room for considerable skill in its management. Recal cases are effectually cured by a few packs, or a single immersion, except when the disease has been a long time accumulating. But frequently the liver or spleen is enlarged, or both may be in a state of congestion, and there is a dyspeptic condition attending it. Very often the skin is extremely torpid, and full of scurf, hardened, and impacted bile, the complexion of a reddish-yellow, and, although sweating is easily produced, the real function of perspiration is scarcely performed at all. In these cases we may perhaps very soon "break the fit," but to effect a permanent cure, the functional

actions of the liver, spleen, and skin must be established. Until this is done, the febrile and agerish symptoms will exist in a more or less disguised form, or the disease will exhibit some other irregular form, and constitute a predisposition to glandular enlargements, dropsical excoriations, rheums and spasmodic rheumatism, etc. These cases require an active treatment for several weeks; and in some few cases, where the constitution has been shattered by repeated fevers in successive summers, and more especially when the patient has been repeatedly cured by arsenic, quinine, calomel, etc., several months' time are required to effect a cure.

*Regimen.*—In continued and in remittent fevers, and in most other acute diseases, we have very little trouble about the diet, were keeping it away from the patient; not much difficulty in this respect, for generally there is no morbid appetite in the way. But with intermittent fevers, which may be regarded as chronic diseases with acute paroxysms, the case is somewhat different. In those cases which linger several weeks, we must, if we can, look to the nutritive function. Here we have not infrequently to restrain the dyspeptic's craving for seasoned stimulants, the hypochondriac's rage for extensive quantity, and the epicure's goading desire for trills and seasonings. We cannot turn the patient off "off-school" fashions, with, "Eat and drink what you feel agree best," and draw on the apothecary for the caratives, but it is our business to know exactly what will agree best, and so prescribe "according to knowledge."

The best diet is wheat-meal bread, cracked-wheat soup with a very little milk and sugar for seasoning, a very moderate quantity of the milder vegetables, and the free use of good, ripe, sweet apples, either baked or boiled. Grapes, tomatoes, peaches, and good dried fruits, are not objectionable. The want of good sweet bread, and dry toast, or hard crackers, are excellent to improve the salivary and gastric secretions.

Water should be drunk rather freely, on account of the tendency to waste the serum by perspiration. Exercise should always be moderate. Over-exercise during the intermission always aggravates the subsequent paroxysms. Sailing and carriage-riding are the most advantageous exercises.

*Symptomatic Fevers.*—These are treated on general principles as far as the constitutional disturbance is concerned, reference always being had to the primary affection. As they depend on a local pathological condition, they will be particularly considered under the heads of the febrile diseases, of which they constitute the symptoms.

**SMALL-POX—VARICELLA.**—The small-pox is a contagious eruptive fever, affecting both the skin and mucous membrane of the mouth, throat, stomach, and lungs. Its course is a fever; this is followed in three or four days by an eruption, which is papular at first, then vesicular, and lastly pustular; the pustules are pointed at first, but afterward become umbilicated. The eruption terminates in twelve to seventeen days in desiccation and crusting, leaving larger or smaller irregular cicatrices.

**Species.**—This disease appears in three forms: 1. Distinct small-pox—*variola distincta*. 2. Confused small-pox—*variola confusa*. 3. Modified small-pox—*variola mollis*. The first variety is the mildest; the eruption is regular, the vesicles distinct, and the fever of the inflammatory type. The second variety is the most severe; the vesicles are irregular and mixed, and mature imperfectly, and the accompanying fever is typhus. The third variety is the small-pox as modified by vaccination, or a previous attack.

**Stages.**—The phenomena of variola are divided into four stages: 1. Incubation, or the latent period; being the time that intervenes between the inception of the virus and the first appearance of the symptoms. This period varies from six to twenty days. 2. Invasion, which extends to the eruption, usually three or four days. 3. Eruption, the rising and pustulating period, extending to the eleventh or twelfth day. 4. Desiccation, extending to the time of cicatrization, usually about the seventeenth day. The time from the third to the eighth day, during which the papule change to pustules, is called the period of maturation.

**Symptoms of Distinct Small-Pox.**—The attack is characterized by the usual prodromic symptoms of a violent fever, as chills or rigors, lassitude, headache, pain and weakness in the back and limbs, tenderness about the pit of the stomach, frequent nausea and vomiting, drowsiness, sometimes stupor, or coma, and with infinite variations are frequent occurrences. These symptoms are succeeded by general heat of the body, dry skin, coated tongue, frequent pulse, and extreme restlessness, which ceases until the eruption appears, when they partially subside.

The eruption appears first on the face and forehead, in the form of minute spots or papule, usually distended above the surface of the skin. They are first noticeable about forty-eight hours after the occurrence of the rigors. During the third and fourth days the eruption extends to the sides of the nose, chin, upper lip, neck, and wrists, then to the trunk and thighs, finally covering the whole body. About the fifth day, little vesicles, depressed in the center, containing a colorless fluid,

appear, surrounded by an inflamed vascular margin, one vesicle arising on the top of each little point or papule. Usually the eruptive fever further abates, or entirely disappears at this time. There is generally, though not always, an increased flow of vasa salivæ, some swelling of the throat, with hoarseness and fullness of swallowing, about the sixth day.

On or about the eighth day, the pustules are completely formed and spherical, terminating in a point, and the vascular fluid becomes persistent; the face and eyelids swell, and the mouth, nose, and fingers are covered with pustules. About the tenth or eleventh day from the access of the fever, or eighth or ninth from the appearance of the eruption, the inflammatory areolæ surrounding the vesicle subside, the contents change to an opaque yellow, and a dark spot appears on each pustule. Usually at this time the transpiration of the face subsides and the hands and feet begin to swell. After the eleventh day the pustules become rough, break, discharge their contents, which, by drying on the surface, form small crusts. In a short time these crusts fall off, leaving the part of a dark brown color, which often remains many days, and when the pustules have been very large, permanent indurations of the skin remain. About the seventeenth day, the *secondary fever*, which comes on about the completion of the pustulation disappears, and the swelling of the hands and feet subsides.

*Symptoms of Confused Small-Pox.*—The eruptive fever is more intense, the strength is greatly prostrated, coma and delirium are frequent, and profuse diarrhoea or salivation is often present. The eruption is preceded by an erysipelatous efflorescence upon the face, from which the pustules emerge on the second day, in the form of small red points, which run together, and form clumps, resembling canker. The pustules are irregularly shaped, and contain a dark, imbecill matter, instead of true pus. When the crusts begin to form, the whole face is covered with a general scab, which falls off from the thirteenth to the twentieth day. The fever does not cease upon the appearance of the eruption, but about the ninth day suffices a remarkable exacerbation; is very hot and rapid, the crumens become dried or black, and petechiæ, hæmorrhages, bloody urine, and exhausting diarrhoea ensue. Should recovery take place, the pits or scars will be much deeper than in the preceding form. The patient frequently dies about the eleventh day.

*Symptoms of Modified Small-Pox.*—The eruptive fever, though generally severe, usually lasts but a single day. On the following day the eruption appears; first on the wrist and about the nose. Frequently a pimple on the rim of the nose gives an indication of the nature of



the mildly. The course of the disease is shorter, and the symptoms more irregular than in the other forms. Some of the eruptions progress to perfect pustules; others die away without suppurating. As soon as the eruption appears, the patient is well unless it is reflexly extended to keep up some degree of irritative fever.

**Diagnosis.**—The diseases with which small-pox is liable to be confounded, especially in its early stages, are—Chicken-pox—*varicella*; measles—*rubeola*; scarlet fever—*scarlatina*; and erysipelas. Variola may be distinguished from chicken-pox by the papules appearing on the back, the continuance of the pustules on the third day, and the absence of suppuration and induration, which characterizes the latter disease; from measles, by the hoarseness, swelling, swollen eyelids and watery eyes, which attend the attack of measles, and the eruption appearing in circumscribed clusters, not rising into viable pustules; from scarlet fever, by the strawberry appearance of the tongue, and the bright scarlet effluorescence of the skin, which usually appears on the second day in the latter disease; and from erysipelas, by the eruption or effluorescence being of a florid red color, and spreading from a particular point over a large surface, in the case of erysipelas.

**Prognosis.**—The result may be judged of by the condition of the body at the time of attack, and the intensity of the fever. It is generally favorable in the distinct and modified forms, and generally unfavorable in the confluent form. Dangerous symptoms are the pustules becoming flattened, livid, and interspersed with discolored spots, a sudden disappearance of the eruption, general pallor of the skin, with great anxiety and extreme prostration of strength, and complication with local affections.

**Post-Mortem Appearances.**—After death, dissection has shown the windpipe, bronchial vessels, lungs, liver, stomach, and intestines to be covered with pustules, with local inflammation in various organs; the whole body runs rapidly into putrefaction.

**Cause.**—Variola is produced by a specific contagion. Its nature has thus far eluded the recognition of our senses, and probably never will be detected by chemical analysis. The virus seems to act like a ferment in relation to some one or more of the elements of the blood, analogous to the process of saccharine fermentation; it is produced by subjecting the body to the effluvia arising from those who already labor under the disease, or by introducing a small quantity of the purulent matter of the disease into the system by inoculation. A doctrine has lately been started that the changes effected in the blood by the contagion of small-pox were a purifying process, analogous to the working of a barrel of beer. But the theory is refuted by the fact that all fer

respiration is a destructive process, absolutely decomposing the substances and either fermented matter, and resolving it into its ultimate elements.

*Loos of Chloagium.*—It is communicated by contact, or through the atmosphere, by particles, or substances infused with the virulent matter, and equally by the living or dead body. It is occasionally epidemic. Sometimes, though rarely, it occurs twice in the same person.

*Mortality.*—From the statistics which have been collected, it appears that one in three or four cases are fatal. In the modified form, or in those who have been vaccinated, the mortality has been much less—about one in twenty. The periods of life of its greatest mortality have been under five and over thirty years of age; the ratio increasing below and above those ages, and being the least between them.

*Sequelæ.*—Medical books describe a long catalogue of diseases as the consequences of small-pox, some of which are more to be dreaded than the disease itself. Among these are boils, elephants, ulcers, gangrene or sloughing of the skin, erysipelas, suppuration of the joints, hip disease, ophthalmia, blindness from opacity of the cornea, inflammation of the serous membranes of the chest and abdomen, tuberculated lungs, consumption, mercurial disease, and scrofula. Some of these sequelæ doubtless result from bad organization, some from bad habits of living, and still more from unfortunate medical treatment.

*Prevention.*—Physicians are not at all agreed as to the propriety of resorting to vaccination as a protection from small-pox. The vaccine virus is the virulent matter modified by passing through the organism of the cow, or some other of the domestic animals; hence the disease resulting from its introduction to the human system is called cow-pox or vaccinia, cow-pox, live-pox, and variolæ vaccinæ. There is no question that it is, to a great extent, a protection from the violence and danger of the animal small-pox; at the same time there is danger of inoculating the patient with some bad humors and even worse diseases, as venereal, or scrofula, from the impossibility of always getting a supply of vaccine matter from healthy communications. In either way there is a risk to incur, and it is a delicate matter for a physician to decide on a subject when both sides are hazardous. I am fully convinced that if people could bring up their children in strict physiological habits, the non-vaccinating plan would be altogether the best; but in a city this seems next to impossible, and in the country it is pretty generally neglected. Children reared healthfully in relation to food, exercise, and ventilation, have little to fear from any disease, however contagious; they may have this, but it will not endanger life, nor produce much deformity nor serious injury. I have seen, within the last year, a most horridly hideous case of scrofulous disease, in which the patient

hasily turned alive at the age of fifteen, from unhealthy virus received when he was but three years of age. Parents often find some one of their children tainted with morbid taints, make any other member of the family, and which they are wholly unable to account for, except on the supposition of foul matter taken into the system by vaccination. My own practice would be to keep children as healthy as possible, and if the scab-pox happen along, let it have its natural course. Those who have the means to do the same I would advise to act accordingly, while those who live, move, eat, and drink after the ordinary manner, would have a better chance at success by resorting to vaccination.

Treatment.—As in all fevers, whether eruptive or not, the temperature of the body is the guiding principle in the treatment. To regulate the temperature and equalize the circulation, are the leading indications. On the access of the febrile symptoms, the bowels, unless entirely free, should be moved by tepid injections. When the fever is fully developed, if the heat is not great, tepid or cool ablutions to the whole body will moderate it sufficiently; if the fever is severe, and the heat extreme, the wet-sheet pack should be resorted to, and renewed as often as it becomes warm, until the skin becomes soft, and the temperature near the normal standard. Give the patient as much water to drink as the thirst demands. Give no food save lemon or whey-water gruel, and not that which stirs the appetite calls for it. Nursing children may take the breast as usual, if suckled. From the second to the fourth day, when the effects of the organism are determined to the skin to produce the eruption, the system is struggling with the stomach and bowels. Thousands have been killed outright by an emetic or strong purgative administered in this critical period. At this time all the vital energies are aroused to throw the virus off through the surface, and if, by an irritating emetic or cathartic, this action be repressed, and the force of the disease directed to the stomach and bowels, death may be the speedy result. The principle here involved affords a satisfactory explanation of the superior efficacy of the homoeopathic treatment, compared with allopathic, in all eruptive fevers, as has been frequently demonstrated in practice in the management of *scarlet fever*.

After the excessive febrile heat is subdued by ablutions or perhaps, two cool or tepid ablutions daily, morning and evening, will generally be sufficient through the whole course of the disease. Should the erisipelas at any time become cold, bottles of hot water should be applied. There is often a strong determination to the bowels, caused by headache, delirium, convulsions, etc., when cold wet cloths should be applied.

The secondary fever requires precisely the same medication as the primary, though if the former has been well managed, the latter gives but little trouble.

Ventilation is especially important; the patient should be kept in a large, well-aired room, of even and rather cool temperature.

Various experiments have been tried to mitigate the itching that often attends the desquamation of the pustules, as well as to prevent itching or stinging. None have, however, been found of much service. Washing the sores with cold cream is as harmless, and probably as useful, as any thing which has been suggested.

Note.—The symptoms of small-pox, in the above article, are stated as they occur in patients whose habits of life pattern after the usual fashions of society. The hydropathic practitioner will also find them very materially modified in persons who have for a considerable time been accustomed to a hydropathic regimen, especially in children who have been trained on the principle of "eating to live," instead of that of "living to eat." Indeed, in such cases many of the symptoms laid down in medical books as characteristic may be entirely wanting. I have a case at this writing under observation, which strikingly exemplifies the difference between an eruptive fever occurring in a very healthy or a very unhealthy person.

Under judicious water-treatment, this frightful disease becomes deprived of most of its terrors, and there is little danger, except in a person of extremely gross habits and foul blood, of the skin being permanently pitted or scarred.

Cow-Pox.—KIND-POX.—VACCINIA.—VACCINE DISEASE.—The vaccine matter is usually inserted under the thumb, by three or four punctures, in one or both arms. On the second day small red hard spots appear, which increase sensibly on the fourth, and on the fifth become small pearly vesicles, most after surrounded by a pink or crimson flush. On the seventh or eighth day the vesicle becomes rounder or angular, and about as much as diameter. The vesicle is unbroken, with a central depression. On the ninth day the flush is increased, hard and raised, often attended with an erythema over the arm or whole body. About the tenth day there is a slight febrile paroxysm. On the eleventh or twelfth day the redness disappears, the center of the vesicle is covered with a brown ash, which comes off about the twelfth day, leaving a deep, circular indentation, about an inch in diameter, with as many, as as there were cells in the vesicle.

The vaccine virus is usually selected from the fifth to the twelfth day.



This disease requires no medication, save what is due to personal cleanliness, and "temperance in all things."

**CHICKEN-POX—SWINE-POX—BASTARD-POX—VARICELLA.**—This disease is characterized by slight feverishness, followed, within twenty-four hours, by an eruption of small, reddish pimples, appearing first on the back, very much resembling the first appearance of the eruption of small-pox. On the second day, the pimples become small vesicles filled with a colorless or yellowish fluid; soon after a thin scab forms at the top, without pain. About the fifth day the eruption disappears, without leaving any mark or cicatrix.

A daily wash of the whole surface of the body, with rose or two wet-sheet packs, should there be at any time accidental feverishness, with a spare vegetable diet, is all the remedial attention it requires.

**MEASLES—RUBELLA—MOXILLA.**—Neurologists divide this eruption into two species, the common and the malignant—*rubeola vulgaris* and *rubeola maligna*. The first species is the mild form; the second is the violent.

**Symptoms.**—The early symptoms resemble catarrh or inflammation—cough, hoarseness, difficulty of breathing, frequent sneezing, itching of the face, smarting of the eyes and eyelids, coryza, thirst, &c. The eruption first appears on the fourth day, consisting of small red points on the face, thence extending downward over the body. These points do not rise into small pimples, but are disposed in crescentic clusters, which feel a little prominent to the touch. On the fifth or sixth day the bright red color changes to a brownish hue, and in a day or two more disappears entirely with a usually or farfrom common desquamation of the cuticle.

The fever either increases with the eruption, and is attended with pneumonic symptoms, as cough, soreness of the chest, and oppressed respiration. It usually abates considerably at about the end of the first week.

In the malignant form the eruption is earlier and more irregular, often receding and re-appearing, and of a dark or lead hue. The febrile symptoms are more severe, the abdomen is very tender, the head is distressing or comatose, the lungs are inflamed, and diarrhoea and convulsions often occur.

**Prescriptions & Treatment.**—The mild form should be treated on precisely the same plan as simple inflammatory fever, and the malignant form should be managed exactly like typhus fever of the putrid

type. Nothing brings out the eruption so promptly and effectively as the wet-sheet pack, and at the same time moderates all the symptoms of violent disorder in the circulating and nervous system. When the eruption comes out full and free, and the fever is not violent, occasional tepid ablutions are sufficient. When there is much soreness of the throat, several folds of wet linen should be applied. Severe cough, pain in the chest, or inflammation of the lungs, requires the chest-wrappers, applied very wet, and well covered with dry flannel. If urines, when present, should be treated with cool injections.

*Separation.*—Under antipathic treatment, this disease exhibits an appalling catalogue of consequences, as—Pneumonia, erysipelas trachealis, bronchitis, consumption, chronic diarrhoea, enlargement of the mammary glands, erythematous ulcers in the jaw, ulceration of the parotid glands, epider and gangrene of the mucous membrane of the mouth. I apprehend that these sequelae are to be attributed, in the main, to the dragging by which one poison is attempted to be got out of the body by the introduction of a dozen others. It is certain that measles has been extensively treated in many different places in the Water-Cure way; and I have never yet known nor heard of a single death, nor of one of these resultant diseases.

**SCARLET FEVER—SCARLATINA.**—This exanthem appears in three distinct forms or species: 1. *Scarlatina simplex*—simple scarlet fever. 2. *Scarlatina exiguæ*. 3. *Scarlatina malignæ*.

*Symptoms.*—After the ordinary premonitory symptoms of general fever, a bright scarlet efflorescence appears, usually on the second day, first on the face, neck, and breast, extending downwards over the trunk and limbs. At first the eruption consists of innumerable red points, between which the skin exhibits the natural color; these spots finally coalesce, so that in a few hours the red flush is universal. On pressure, the skin looks pale, but readily recovers its color as when the pressure is removed. In one or two days more the efflorescence again becomes partial, and is disposed in large, irregular patches, which do not disappear on pressure. The skin feels rough to the touch, and is occasionally studded with small milium vesicles. About the fifth day the rash begins to decline, is indistinct on the sixth, and generally disappears wholly by the eighth. Desquamation of the cuticle commences about the end of the fifth day on the parts first affected, now extending over the body. On the trunk and limbs the cuticle comes off in the form of scurf, and from the hands and feet in large scales. At this time the mucous membranes are more or less affected. The eyelids, lips, edges of the tongue, uvula, and palate exhibit a bright red color, the tonsils

are enlarged, and there is difficulty in swallowing. The fever disappears with the rash.

Such is scarlet fever in its mild form. The anginous variety is characterized by more severe general symptoms, dejection of mind, pain in the head, soreness and stiffness of the muscles of the neck. On the second day, hoarseness, difficulty of swallowing, hurried breathing, interrupted by frequent sighing, breath hot and burning in the lips, heat of the surface very great, weak and frequent pulse, pungent, prickling pain. On the third day the face, neck, and throat appear redder than usual, or scarlet patches appear about the mouth and nose. The sub-mucillary glands are enlarged and painful, the palate, uvula, and pharynx are reddened, specks and collections of thick mucus are observed about the mouth and throat. In a few hours, an intense redness prevails over the whole body, which is perfectly smooth to the touch. On the fifth or sixth day the deep scarlet is succeeded by a brown color, the skin becomes rough, and peels off in small scales.

The malignant form has been extensively known by the name of putrid sore throat. It is distinguished by intense inflammation of the throat at the outset, soon proceeding to deep ulceration and extensive sloughing. All the salivary glands are much enlarged, the eruption appears later in irregular patches, often disappearing suddenly. The general symptoms are all indications of the worst or putrid form of typhus fever.

*Diagnosis.*—Scarlet fever may be distinguished from measles, by the absence of cough, sneezing, and catarrhal symptoms; by the throat affection; by the peculiar strawberry appearance of the tongue; and by the greater extent and less defined form of the eruption.

*Sequelæ.*—The books give us almost as terrible a list of diseases following as in the sequelæ of the scarlet fever, as they do in the case of measles. In the list are—Anasarca, or general dropsy, enlargement of the joints, scrophulous affections, discharges from the ears, ulceration of the glands of the neck, cyathæmia, and inflammatory affections of the internal viscera. But, as in the case of measles, I regard these consequences as owing much more to mismanagement than all other causes put together.

*Peculiarities of Treatment.*—The melancholy records of medical science afford us no page a stronger exemplification of

—The deadly nature of the healing art.

than in that wherein is written the management and fatality of scarlet fever. One, two, three, four, five, and even six members of a family are sometimes successively attacked and successively die—whether cut

down by the disease, or killed by the venefica, or hurried to the grave by their criminal power. Some seven years ago, I knew a regular physician to treat his three children—all he had—with the ordinary bleeding, purging, and antimonializing routine, and they all died; and I turn not the least doubt he has treated all the cases he has had in the same way ever since, without even the suspicion that there was any possibility of a better way. About fifteen years since the disease prevailed epidemically among children at several places in western New York. I happened to be acquainted with two physicians residing in adjoining towns, whose practice was somewhat different. One bled freely, and gave liberal doses of purgative medicine. He lost about twenty patients; in several instances two, and in two instances three dying out of one family. The other bled only in a few of the milder cases, avoided all drastic purgatives, confining his treatment mostly to gentle laxatives, simple diaphoretics, and astringent gargles. This physician lost but one case, although he treated a larger number than the former one. Both physicians had their particular friends and admirers, and I have no manner of doubt the doctor who lost twenty patients required just as much reputation as a skillful practitioner, and enjoyed just as much of the confidence of the people, as the doctor who lost but one patient; so likely are people wedded to a notion in which they have been educated.

The mild form requires very little treatment. Occasional ablutions of tepid water, or the wet-sheet pack once or twice a day, if the fever is high, with a free injection of warm water to clear the bowels, if the abdomen is congested, swelled, or painful, are sufficient.

Both the benign and malignant forms require careful management. Employ the wet sheet, ablutions, or tepid sponging, according to the principles already stated. The feet generally incline to be cold, and particular care must be taken to have them warm and comfortable whenever the pack or any general bath is resorted to. Hot bottles or hot foot-baths answer this purpose. The throat is the most endangered part: in the benign form, the swelling must be treated with the constant application of cold wet linen cloths, well but loosely covered. In the malignant, or putrid form, the coldest water, or punch, ice, should be frequently applied around the neck, and sips of cool-water or bits of ice occasionally taken into the mouth. On the onset of the disease move the bowels moderately with warm water injections, aided by the drinking of warm water or gruel if necessary. Whenever diarrhea attends, employ cold enemata. Do not disturb the stomach and bowels during the eruptive effort. If there is then great sickness or nausea, apply very cold compresses to the abdomen. Ex-



similar restlessness, anxiety, delirium, or violent headache may be best relieved by a hot foot-bath, with a cold compress to the head, or, if the patient is able to sit up, a warm hip-bath.

There is often a considerable degree of blindness and deafness, as well as delirium, attending the swelled throat; and physicians and friends will often, in these particular symptoms, treat us a little harshly, or a little coarsely, or a smart caustically, or a barbarous bludge. They are all bad worse, or worst. There are stages and stages in a severe case of scarlet fever, in which a single dose of an ordinary emetic or purgative, or a single bleeding, would be inevitably fatal; and it is to be regretted that so few physicians can or will understand this fact. In scarlet fever, as in all the exanthemata, there is a period when all the vital powers combine in a general effort to throw the morbid humors and febrile irritation upon the surface. It is at this precise time that the physician regards the intensity of the fever as an indication for the lancet, or a relaxing emetic, or a depurating purgative. If he employs either of them at this critical moment, he either suppresses this effort, or produces a revulsion of the whole force of the disease to the internal mucous membrane, resulting, perhaps and probably, in inflammation, disorganization, and death.

Dr. Johnson, in relation to the diet for scarlet fever patients, says: "If there be appetite, farinaceous puddings should be given; if not, beef-tea, mutton-broth, gruel, barley-water, &c. Should the eruption come out luxuriantly, and symptoms of gross debility and oppression set in, no cold water should be allowed, but the patient broth, &c., should be given quite hot; and ten, fifteen, or twenty drops of aromatic spirit of ammonia, in water, twice a day; and hot tea should be administered while lying in the wet sheet." I protest against this whole plan of medication as being neither hydropathic nor rational. Nothing can be more preposterous than forcing food, especially stimulating animal stops, into the stomach, during a high fever, when the digestive powers are utterly prostrated. In lieu of the hot tea, hot broth, and hot spirit recommended by Dr. Johnson, the warm foot-bath, or hot fomentation to the abdomen, will, in the case supposed, supersede all necessity of employing these stop-drug preparations, as has been abundantly proved in the thousands of cases of this fever which have been successfully treated by American hydropaths, without, so far as I have heard, losing a single case when no drugs or animal stops were employed.

**ERYTHELMA—St. ANTHONY'S FIRE.**—This affection has been divided into *idiopathic erythema*, produced by the general causes of fever, and *traumatic erythema*, resulting from wounds and injuries. The

latter species frequently follows surgical operations performed on persons whose systems are gross, and whose blood and secretions are very impure. For therapeutic purposes three distinctions are important.

*Symptoms.*—After the usual febrile shifts, nausea, vomiting, &c., the patient is affected with great confusion of the head, alternating often to delirium or coma; the tongue is moist, and uniformly white; the pulse full, frequent, and compressible. About the second or third day, some portion of the skin exhibits a florid red color, from which the effluescence spreads gradually, being bounded by a distinct margin, slightly elevated. The effluescence extends until it occupies a large surface, attended with considerable swelling, and a peculiar acid heat of the inflamed parts. When the face is the part principally affected by the effluescence, the eyes are often closed by the swollen eyelids, and the whole bony arch is more or less inflamed. The effluescence terminates in a few days, the time varying considerably, in the formation of vesicles, or in desquamation of the cuticle. The fever has the usual daily exacerbations of the continued type, but rarely manifests any marked remission until desquamation ceases to spread, from which time, in favorable cases, considerable convalescence ensues.

*Special Causes.*—No two diseases are more intimately connected with bad dietary habits than erysipelas and scarlet fever. Both are very prevalent where wine, food, greasy sweet-cakes, and concentrated preparations of food are plentiful. Sudden changes of temperature operating on a system inflamed by gross or obstructed by constipated streams, occur in the principal circumstances on which these forms of eruptive fever depend.

*Orticular Terminations.*—This division, medical books tell us, often terminates in a dropsical swelling—*erysipelas edematosa*; deep-seated ulceration of the cellular membrane—*erysipelas gangrenosum*; mortification of internal organs; and sometimes it suddenly disappears in one part, and attacks a distant one—*erysipelas erythematicum*. These sequelæ, however, like those of all the other exanthemata, are, to a much greater extent, attributable to injudicious treatment, or drug-treatment, than to all other causes combined.

*Indications of Treatment.*—As in the case of all the other eruptive fevers, the general fever and the local inflammation may exhibit all degrees of violence and malignancy, from the mildest form of erythema, or inflammatory fever, to the most virulent character of typhoid fever. The circumstances already noticed in relation to those fevers must be regarded in the treatment of this. Generally, the head requires the very free application of the coldest wet shifts, or the pouring head-bath; and very frequently the feet are cool or cold, and require the

warm bath. In the early stages of most cases, two or three tepid-sponge packs a day are sufficient; but when the fever is strongly typhoid, the pulse weak, the circulation low, and the heat irregular, it is better to sponge the whole surface frequently with tepid water. Tepid injections should be employed freely on the access of the disease, but not resorted to during the eruptive stage, on the second or third day, unless there is manifest biliousness and distension, indicative of fecal accumulation in the bowels.

Dr. Johnson advises, in this disease, the wet sheet occasionally, and a nitrate of silver wash, or a coating of flour to the skin, a dose of castor oil, and then quinine and sulphuric acid once in six hours. Such treatment is sufficiently absurd, coming, as it does, from the author of a book on "Dysentery and Hydrophobia;" but the absurd becomes the ridiculous when we come to Dr. Johnson's dietary part of the treatment, viz.: Strong beef-tea, thickened with pearl barley; yolk of eggs beaten up with milk, and a little wine and nutmeg added; sage, with a little wine in it; cold beef-tea, or cold mutton-broth, as *equation drink*.

The only way to reverse Dr. Johnson's extreme allopathic treatment of this fever, with his outrageous enthusiasm of the superior efficacy of water-treatment in all fevers, as a preceding work, is by supposing he never had any experience in treating erysipelas with water; and hence, as something must be prescribed, he naturally falls back on druggery. His reasons for introducing the drug-treatment here are completely self-satisfying. He says: "The weight of experience is in favor of quinine, and I should not consider myself justifiable in rejecting its aid, merely to gratify the pride of an exclusive practice."  
\* \* \* Human life is not precisely a thing to be trifled with merely to satisfy an important whim, or foolish enthusiasm."

Now, if the principle implied in the above quotation is correct—if it be true that drug-treatment will save life in a fever where water-treatment would sacrifice it, the whole hydrophobic system is one gross mistake, and its practice mere charlatanism. But if the exact contrary be the truth, as I hold, then Dr. Johnson's druggery, in scarlet fever and erysipelas, is considerably worse than scientific nonsense. American water-doctors find the new system as all-sufficient in these as in all other forms of fever. None of them, however, to my knowledge, have ever administered the execrable ship-grub food, of eggs, wine, nutmeg, mutton-water, &c. I would rather trust the patient with no medication whatever, than with the best water or drug-treatment, in connection with such a regimen as Dr. Johnson recommends.

**MILARY FEVER.—MILIARIA.**—This disease takes its name from the

resemblance of its vesicles to the grains of millet. Some authors group a variety of similar rash-eruptions under the general name of *miliaria*. An eruption similar to that of *miliary fever* often appears in the course of other acute diseases, when the patients have been kept in hot, un-ventilated apartments, or dressed excessively with hot misbraking drinks. Lying-in women are peculiarly liable to this miliary eruption, under the usual erroneous management of their medical advisers. This fever occurs most frequently in those females who use tea excessively; it often attacks children who have been accustomed to hot drinks and stimulants; and all persons whose blood is inflamed, and whose nerves are exhausted by acrid stimulants and narcotics—as cider, tobacco, etc.—are quite liable to it.

*Symptoms.*—With the ordinary accessory symptoms of fever, there is laborious breathing, frequent sighing, great debility, depression of spirits, restlessness, wandering pains, followed sooner or later by a profuse sweat, of a sour, rank odor, accompanied with a troublesome itching or pricking of the skin. The sweat may appear at two, three, four, five, or six days. At length, at an uncertain period, an eruption appears on the neck and breast of small red papule, about the size of millet-seeds, these gradually extend downward, over the trunk and extremities. The papules do not become prominent to the eye, yet feel elevated to the touch. Often their colour disappears, leaving them of the color of the skin. After two or twelve hours, a small vesicle appears upon the tip of each papule, at first of a whey color, usually turning gradually white. Sometimes the vesicles remain red, and sometimes red and white vesicles are intermixed, but always have a strong, rank, offensive smell. In two or three days more the vesicles break, and are succeeded by small crusts, which soon fall off in scales. The febrile symptoms do not subside when the eruption appears, but after a variable interval.

*Diagnosis.*—*Miliary fever* is easily distinguished from all others by the profuse sweating, attended with the fætid odor, and this being followed by the peculiar eruption.

*Particularities of Treatment.*—As *miliary fever* is attended with unusual debility in its early stages, cool or tepid applications are preferable to very cold. Hot or cold local applications, according to the rules often heretofore adhered to, with frequent sponging of the whole surface, according to the degree of general heat, are usually all the soothing appliances required. Unless there is diarrhoea, the bowels should be freely moved by tepid injections at the outset. Local pain should be promptly treated with the cooling or warming wet compress, as either feels most agreeable to the patient. When this fever has



been produced by the suppression of any customary discharge, warm hip and warm foot-baths are serviceable.

*Note.*—Some authors treat of "gastric," "mucous," and "catarrhal" fevers. These are merely complications of some of the forms of fever already described, with prominent symptoms of indigestion, or an increased and excessive secretion of a slimy or mucous matter, from acid bile or some other extract, or the usual evidences of what is called a "cold in the head." Sometimes these local irritations are attended with such a degree of constitutional febrile disturbance as to render the above applications.

**PLAGUE.—Typhus Pestis.**—The plague was first known in English history in 1330, and lastly in 1679. In 302 it raged over Syria. In 540, and for half a century afterwards, it prevailed extensively over Europe and Asia. Since 1645, when it last visited Edinburgh, it has repeatedly ranged all the continent of Europe. Marseilles was ravaged by it in 1720, and in the course of the seventeen preceding centuries, it experienced twenty-seven visitations. It prevailed at Moscow in 1371 and 1772; at Naga, in 1815 and 1816; in the lagoon of Venice in 1818; at Malta, in 1813; and at Grossenberg, in Silesia, in 1819. Lately it has been confined to the northern parts of Africa, where it is reported to have originated.

The history of the plague, like that of the cholera, is a tremendous lesson, whose true moral is hygiene, unfortunately, however, but little understood, and still less heeded. Wherever and whenever it has raged, the place and the people were harried as it were, in their own filthiness, and rising in the grossest sensuality. The narrow streets, dirty houses, unventilated apartments, and gross food of the inhabitants, with drunkenness and debauchery, have ever been the inviting causes of the pestilence in all the cities of the Old World where it has ranged and desolated. Athens, Rome, London, which were formerly more than at present, the world's great centers of luxury and licentiousness, have been repeatedly scourged with this prince of pestilences. Since the habits of the civilized world have become more cleanly, yet more debilitating, we have internal dyspepsia instead of external catarrhes, and the cholera instead of the plague.

The character of the plague is that of a malignant exanthem; a typhus fever of the putrid form, attended with cutaneous and imperfectly suppurating tumors, sometimes running into deep gangrenous ulcers, the patient often feeling as if burning up with internal fire. The treatment, on hydropathic principles should be the same as for the putrid form of typhus fever.

## CHAPTER II.

## VISCERAL INFLAMMATION.

In this chapter, I purpose to treat only of acute inflammatory affections of the viscera. They are all characterised by a fixed pain or soreness, and some of heat in the organ diseased, with a change in its secretory or functional action, and attended by a constitutional febrile disturbance. The accompanying fever may be either of the inflammatory or typhoid type. A visceral inflammation may be defined a general fever with a disproportionate local affection. This class of diseases is almost universally treated by allopathic physicians on the antiphlogistic plan—bleeding, salts, antimony, and a reducing regimen.

The group of diseases actually associated under this head comprises the following species :

1.	Inflammation of the Brain.....	Phrenitis.
2.	"	Pharynx.....Quincy.
3.	"	Larynx.....Laryngitis.
4.	"	Trachea.....Croup.
5.	"	Parotid gland...Mumps.
6.	"	Lungs.....Pneumonia.
7.	"	Heart.....Carditis.
8.	"	Stomach.....Gastritis.
9.	"	Bowel.....Enteritis.
10.	"	Peritoneum...Peritonitis.
11.	"	Liver.....Hepatitis.
12.	"	Spleen.....Splenitis.
13.	"	Kidneys.....Nephritis.
14.	"	Bladder.....Cystitis.
15.	"	Uterus.....Hysteritis.
16.	"	Testes.....Orchitis.

It is true that Otitis (acute inflammation of the ear), Ophthalmitis (acute inflammation of the eye), and Dysentery (an acute inflammation of the mucous membrane of the bowels), belong pathologically to this group; but each possesses so many peculiarities, that system may be advantageously sacrificed to convenience; hence they will be treated of in subsequent chapters.

THEORY OF INFLAMMATION.—Next to fever the subject of infla-

medicines has occupied the attention and exercised the ingenuity of medical scholars. But still we have no satisfactory explanation of the problematic cause of its various phenomena. Two theories are, at the present time, about equally prevalent in medical schools, one of which is, singularly enough, the exact opposite of the other. But, stranger still, men of our popular medical authors who are diametrically opposed to each other in theory agree exactly in practice; while others who agree exactly in theory are diametrically opposed in practice. These facts alone are sufficient to prove the whole pretended science of the popular system a mere hypothesis, and the whole drug-practice a mere experiment.

To illustrate: one theory of inflammation is, that it consists essentially in an *increased* action of the capillary vessels of that part which is the seat of it; and the other is, that it consists in a *diminished* action of the same vessels. Now, it would seem that these theories are distances enough to authorize opposite plans of treatment. But it does not so happen. Medical reasoning is a process *ad genericum*. The most contradictory conclusions are often drawn from the same premises, and the same conclusion is often deduced from the most opposite premises. All medical books extant of the allopathic school "agree to disagree" in this. They all recommend both stimulating and reducing treatment for all forms of inflammation, whichever theory they adopt. If a person has inflammation of the head, lungs, liver, joints, etc., with a full, strong, hard pulse, they say, "*bleed*, because it reduces the strength of the system, and abates the force of arterial action." If another has inflammation of the same parts, with a weak, frequent, oppressed pulse, they still say, "*bleed*, because it strengthens the vessels by taking off a part of the load they have to carry." So, whether the action is high or low, strong or weak, bleeding is the remedy. The theory and the practice have really nothing to do with each other on the depleting plan. Nor is there a better connection between theory and practice on the stimulating plan. In many cases of putrid and rheumatic, in *dysenteric* inflammation, in burns and scalds, etc., stimulants are recommended by many authors, as opium, spirits of turpentine, camphor, brandy, nitrate of silver, spirits of wine, mustard, &c. Why? "*Because*," say the theorists on the side of increased action, "*the action of the capillaries has been prematurely arrested, and we must let the action down gradually, by applying stimulants of a less intensity than the problematic cause of the diseased action;*" and on the other hand, the theorists on the side of decreased action say, "*give stimulants, because the action of the capillaries has been prematurely diminished, and thus excite them to greater ac-*

tion." Such is the confusion in which the whole subject of inflammation is involved—a confusion which, to my mind, is conclusive that both theories, and all the practices predicated upon them, are radically erroneous.

**RATIONALE OF INFLAMMATION.**—Experiments have amply demonstrated the fact, that the vessels in an inflamed part are distended with blood beyond their normal condition, and that the blood in them moves slower than in health. As far, then, as increased or diminished action is concerned, the latter theory seems plausible; and all the conflicting methods of medication appear to aim at producing, directly or indirectly, one single effect, viz., contraction of the coats of the over-distended vessels. For this purpose the most opposite agents and processes are resorted to; the blood taken out, or heavily administered, hot fomentations employed or ice applied, refrigerating nitre or scratching capsaicum exhibited.

There is, undoubtedly, in the early stage of inflammation, an increased contractile effort of the capillaries, but accumulation and engorgement with relaxation soon become their permanent condition. This temporarily increased action cannot, therefore, be regarded as the proximate cause of inflammation, but as the effort of nature to overcome its cause or counteract its effects.

Inflammation, as well as fever, is the effort of the vital powers to protect the organism from injurious mechanical, chemical, or vital irritants, or to expel noxious materials. This is proved by the phenomena of a multitude of morbid conditions. When a part of the body becomes gangrenous or dead, the living parts, provided there is sufficient vitality remaining in them, immediately form a line of demarcation, and the dead portion is soon separated from the living; this process is called sloughing. When a chemical or mechanical body is imbedded in the flesh too firmly to be removed by absorption, as a bullet or a splinter, purulent matter is formed around it, and its farther action on the parts is partially or wholly prevented by inclosing it in an abscess. When a globule of calomel gets into the lacteal vessels, the mesenteric glands, which may be regarded as organic inspection offices, receive an increased determination of blood, swell up, or inflame, and thus retard the onward motion, until it can be more or less modified or destroyed by the vital powers. When a structure is divided, as by an incised wound, coagulable lymph is poured into the wound, forming, as it were, a bed for the newly-formed vessels to re-erect the part—a process called *ulcerative inflammation*. And when a portion of the flesh is torn away by violence, or decomposed by corrosives, or burned



out with fire, a covering of purulent matter is thrown over the exposed surface; beneath which granulations—a new growth of substance—gradually fill up the cavity; this process is called in medical books *healing* or *restorative inflammation*.

**VARIETIES OF INFLAMMATION.**—Various circumstances conspire to modify inflammatory affections so much as to allow of their division into several well-marked and distinct kinds. Peculiarity of constitution, the structure of the part or organ, the nature and violence of the predisposing and exciting causes, are the most prominent of these circumstances. Inflammation tending to suppuration is a defined kind, as in the case of boils, abscesses, etc., is called *phlegmonous*. That form which is attended with eruptions, effluvescences, rashes, extensive elevations, rapidly-spreading gangrene, etc., is called *erysipelloidous*, or *erythematous*. When it tends to the formation of a preternatural membrane over the mucous surface, as in croup, tubular diarrhoea, catarrh of the bladder, catarrh of the uterus, etc., it is called *membranous*, or *membranoid*. When it affects mainly the glandular structures and mucous or serous membranes, without febrile symptoms in the early stages, as in tubercular congestion, internal dropsy of the lung, and swellings of the congested glands, it is called *strophous*, or *strophous*. When confined mainly to the structure of the joints, as in gout and rheumatism, it is called *arthritis*.

Inflammation is also divided into *acute*, *subacute*, and *chronic*. The first is attended with general fever; the second is accompanied with occasional febrile paroxysms; the last is without constitutional febrile disturbance.

**TERMINATION OF INFLAMMATION.**—All inflammatory affections terminate either in *resolution*—a gradual subsidence of all the symptoms; or in *gangrene*—the death of the inflamed part. But there are many results or consequences of inflammation which are usually called terminations by medical authors. These are *resolution* or *effusion*, *suppuration*, *ulceration*, *isolation*, and *adhesion*.

**GENERAL TREATMENT OF INFLAMMATION.**—The hydropathic management of a visceral or local inflammation is precisely the same as that of a general fever, with the addition of the local appliances. The heat, pain, swelling, and all incidental accompaniments, are to be treated exactly as we would treat the same symptoms when present as complications of a simple fever. The regimen is also, in all respects, the same as for simple fevers.

**INFLAMMATION OF THE BRAIN.—PHRENSIS.—BRAIN FEVER.**—This disease is also sometimes called *phrensy*. Some authors distinguish it into two forms—*encephalitis*, when it affects principally the substance of the brain; and *meningitis*, when it affects principally its covering membranes; but as the disease, whichever structure is primarily affected, soon involves both, and as the treatment is in all respects the same, according to the violence of the symptoms, this distinction has no practical utility.

**Symptoms.**—Acute or excruciating pain in the head, throbbing of the temporal and carotid arteries, flushed face, eyes injected and violently red, dilated pupil, and a wild expression of countenance, characterize the disease when fully formed. These symptoms are preceded by various cerebral and febrile disturbances, sometimes violent delirium, at other times stupor and vomiting, or general convulsions. The bowels are usually extremely constipated. There is also great intolerance of light and sound, incessant watchfulness, the skin is dry and hot, the pulse hard and quick, the tongue is dry and covered with a white fur, and there is intense thirst.

**Special Causes.**—Exposure the head to a hot vertical sun, sudden exercise, intense study, excessive passion, external violence, metastatic gout or rheumatism, and repelled eruptions, are among the most frequent of the exciting causes.

**Diagnosis.**—Inflammation of the brain resembles, in many prominent symptoms, several other complaints, from which it is impossible to distinguish it. From *menia* it is known by the accompanying fever; from the *delirium of agnoscantia* fever, by the delirium in the latter case succeeding instead of preceding the febrile symptoms; from the *delirium of typhus*, by the suddenness of its attack; from the cerebral irritation or determination to the brain arising from the effort of loss of blood, by the pulse of the skin and countenance in the latter case; and from *delirium tremens*, by the pulse of the surface and general tremor of the body and limbs which denote the latter.

**Peculiarities of Treatment.**—In most cases, inflammation of the brain is attended with synocha, or high fever, and requires thorough general and local cold treatment. The intensive-bath is excellent; or the patient may be enveloped in double or treble wet sheets, while the head is cooled with pounded ice, cold cloths, or the poultice-bath. The extremities must be carefully watched, and if the feet are not hot, like the rest of the body, they should be bathed in warm water. The constipated state of the bowels, of course, requires copious tepid injections. In some cases where the whole scalp feels excessively sore and tender, cold water feels disagreeable, and then tepid water is more

soothing, and, by more rapid evaporation, will cool the head as effectively as the cold water will in other cases. If a single sheet is employed for packing, it will require to be renewed several times a day.

**INFLAMMATION OF THE THROAT—QUINCY.**—Under this head are included four distinct forms of inflammation of the throat, all of which are characterized by heat, redness, and swelling of the fauces, with painful and difficult deglutition.

**Symptoms.**—The first form of the disease under consideration is the common quincy, or tonsillitis of authors, called also *dysentia* or *angina* in medical books. It consists of a swelling of the mucous membrane of the fauces and tonsils, by which the functions of swallowing, respiration, and speech are performed with great pain and difficulty; the accompanying fever is violent, and the disease terminates in a few days by resolution or suppuration. The second form is known as the malignant, or *strangled sore throat*. The attending fever is typhoid; the fauces exhibit a crimson flush, with stomatitis covered with mucus, and spreading sloughs of an ink or whitish hue. This form is frequently epidemic. In the third variety, the redness is more dark, and is most violent at the lower part of the fauces; the swallowing is extremely painful and difficult. The fourth variety has been called *quincy of the epiglottis*; the difficulty in swallowing is felt below the pharynx, and the food is generally rejected when it reaches the seat of obstruction.

**Special Causes.**—All of these forms of throat disease are most common in spring and fall, which fact shows that sudden changes of weather, or "taking cold," are their principal exciting causes.

**Precautions of Treatment.**—The wet compress, consisting of several folds of linen wet in cold water, must be promptly applied around the throat, and frequently renewed. The whole body must be well rubbed in the dripping sheet, or tepid half-bath, and then wrapped in the dry blanket, so as to produce moderate perspiration; or the general fever may be treated with the wet-sheet pack. In the malignant form, small draughts of weak-water should be frequently taken, and the coldest water, or powdered ice, applied to the throat whenever the scorching heat is troublesome.

**INFLAMMATION OF THE LARYNX—LARYNGITIS.**—This disease, in some of its symptoms, resembles quincy, and in a still greater number, the croup. It consists in a suppurative inflammation of the membrane of the larynx, extending backward to the membrane common to itself and the oesophagus, between which purulent matter is often formed

It is a disputed point whether Whooping, in its last stage, was attacked with this disease or common quincy; but it is certain that he died of astheny and the looses!

*Symptoms.*—After the initial symptoms of fever, the more intense looses and indigestion; the breathing laborious, with a painful sense of constriction in the throat; the fauces are swelled and enlarged, the swelling extending to the face and eyes, the latter sometimes protruding as in cases of strangling; the pulse is frequent, the tongue furred, and every attempt to swallow is attended with great distress, the muscles of deglutition being thrown into violent spasms, threatening the patient with instant death from suffocation.

*Dagnosis.*—It is distinguished from *croup* by the existence of a constant and voluntary hawking, rather than a forcible and involuntary cough; and from *common quincy* by the absence of any considerable swelling of the tonsils.

*Peculiarities of Treatment.*—There is no material difference in the therapeutic management required for this and the preceding variety, except that induced by the danger of immediate suffocation. Ipecacuan gargles should be freely employed, in conjunction with cold wet cloths to the throat, and the general tepid-bath, or warm sheet; and if the extreme sense of suffocation is not relieved in a few hours, the patient should be put into a full hot-bath for ten or fifteen minutes; if, however, this is unavailing, the hot fomentations to the abdomen should be resorted to occasionally, in connection with the general and local treatment already mentioned.

**INFLAMMATION OF THE TRACHEA—TRACHEITIS—DYSPNOIC TRACHEALIS—BRONCHITIS—THE CROUP.**—This disease consists of a peculiar inflammation of the mucous membrane of the trachea, or windpipe, attended with a thick, tenacious, glairy secretion, which hardens, if the disease is not soon arrested, into a pseudomembrane, and produces death by closing up the air-passages in the larynx. In some few instances, however, it has been expectorated. A similar membrane is also sometimes formed in the bronchi, bladder, or uterus, and cast off in the form of a tube, or of fragments resembling, and sometimes mistaken for portions of the various membranes.

*Symptoms.*—The first stage is denoted by a ringing cough, in which many children are subject on taking cold, attended with little or no change in the breathing or voice. This may be called the premonitory stage. In the second stage there is a shrill, ringing cough, with difficult breathing; the voice is altered, hoarse, and broken; the breathing is sometimes like a p, and at other times creaking or crowing; the eyes



are heavy, watery, and bloody, and many patients die before the disease progresses further. In the third stage the cough and voice are staphleous, the respiration is laboured and suffocative, and the case is generally regarded as hopeless. The cheeks, eyes and nose manifest a purple redness; the complexion is often mottled, or the flush of the cheeks is circumscribed; the pulse is very small and frequent. In the fourth stage the voice is whispering and low; the cough less frequent, and scarcely audible versus the room; the trachea is coated with effluvia; the face is leaden, the eye fixed, and the extremities cold, and final insensibility is gradually closing the scene.

*Special Causes.*—The croup most frequently attacks children between the ages of one year and twelve, though occasionally it occurs in infants at the breast; and very rarely in adults. Sudden alterations of temperature, especially going from a heated, ill-ventilated apartment to a liberal atmosphere, or vice versa, with little or no attention to bathing habits, are among the prominent circumstances which co-operate to produce this disease.

*Prognostics of Treatment.*—As the danger from this disease consists in the effusion which exercises on the cuticular membrane, the treatment should contemplate the arresting of this secretion at the earliest possible moment. The whole throat must be instantly enveloped in several folds of very cold wet cloths, and these should be very frequently changed until the respiration becomes free. If the fever is not very high, the whole body should be bathed in tepid water at about 70°, and then packed in the dry blanket, until the heat returns, or perspiration takes place. If the general fever and heat of the surface are considerable, the wet-sheet pack is the best, to be renewed occasionally, and managed in all respects as for a common fever. Attention to the bowels, cold extremities, irregular temperature, &c., is required, as in all febrile and inflammatory complaints.

When called to a patient, after the partial or complete consolidation of the tenacious secretion, evinced by extremely painful and suffocative breathing, and constant but unavailing efforts to expectorate, warm water should be copiously drunk, and the throat tickled with the finger or a feather, so as to provoke moderate vomiting. Nearly every case of croup can be cured by a prompt recourse to these measures on the first attack. But all treatment may fail in the third and fourth stages of the disease. The pseudo-membrane has, in a few instances, been expectorated in fragments, and the patient recovered; but usually its formation is fatal.

The eruptions consist of a painful, unresponsive swelling of one or both parotid glands; it is contagious, and often epidemic; it is often accompanied with swelling of the testes in males, and of the breasts in females.

*Symptoms.*—The tumor is at first movable, but soon becomes diffused to a considerable extent; it increases till the fourth day, and then involves the maxillary glands in the inflammation. It is attended with but slight febrile disturbance, and gradually declines after the fourth day.

*Peculiarities of Treatment.*—Very little medication is required in ordinary cases. Abstinence diet, the wet sheet whenever the whole surface is affected with feverish heat, and the application of a wet linen cloth, covered with a dry one, to the inflamed part, whenever this is very hot or painful, constitute the remedial plan. Whenever suppuration occurs in the testes or breasts, the hot warm-bath should be employed, succeeded by wet compresses to the part affected, well covered, so as to produce the fermentation or positive effect.

*INFLAMMATION OF THE LUNGS.—PNEUMONIA.—PNEUMONIA—PNEUMONIA—LUNG FEVER.—PLEURISY.*—All of these terms have been employed to designate the same essential disease, which is an acute inflammatory condition of some part or all of the substance of the lungs, or of their surrounding membranes, or of both. Medical authors apply the term *pleurisy* to the disease when it primarily attacks the pleura; and the term *pneumonia*, or *pneumonitis*, when the primary attack appears to be in the parenchyma, or substance of either or both lungs. The term *peripneumonia* notha, or bastard *pneumonia*, has been given to a modification of the disease, attended with a low, typhoid fever of the nervous type, which has sometimes prevailed as an epidemic. Practically, all these distinctions are useless; for whether the inflammation first affects the investing membranes or the substance of the lungs, it soon involves both; and precisely the same treatment is indicated whether we call it one or the other of these technical names.

*Symptoms.*—Sometimes the constitutional symptoms appear first, as rigors, flushed, purplish face, injected conjunctivae of the eyes, furred tongue, &c., and sometimes the local symptoms precede; these are gross heat and sense of weight about the chest; full, deep-seated, or acute pain; short and dry cough, with a slight mucous expectoration; frequent, short, and anxious respirations. In a day or two the expectoration becomes viscid, and more or less rusty-colored, yellow, or bloody. The pulse is full, strong, and quick, or small, weak, and frequent, as the fever approximates the inflammatory or typhoid type. Dr. Shaw,

in his *Manual*, mentions "in pale" as among the symptoms, but this is most assuredly a mistake.

**Terminations.**—This disease terminates by resolution, suppuration, gangrene, effusion, or hemorrhage. Under thorough water-treatment from the outset, it has always, within the scope of my experience and observation, terminated very promptly by resolution.

**Spinal Column.**—Extreme vicissitudes of temperature, unequal exposure of the body, cold or wet feet, exposure to wet or cold when the body is in a state of exhaustion from sleeplessness or over-exertion, are especially conducive to this disease.

**Particulars of Treatment.**—If the general febrile symptoms precede the local, the best sheet is to be resorted to, and repeated according to the degree of superficial heat. When the local pain, cough, difficulty of breathing, etc., appear, the chest-wrapper should be constantly worn, covered with a dry cloth, and renewed five or six times a day. The shallow tepid-bath, or if this is impracticable, the tepid sitz-bath, should be employed once or twice in twenty-four hours. When the heat is unequally developed, the pulse low, the patient extremely prostrated, and the extremities pale or cold, the warm sitz and foot-bath are serviceable. Frequent tepid injections are generally advisable; and when the expectoration is painfully sticky and scanty, warm water-drinking, to the point of slight nausea, or even moderate vomiting, will afford speedy relief.

**INFLAMMATION OF THE HEART—CARDITIS.**—Whether the muscular substance of the heart is ever the seat of an inflammatory affection, which is capable of distinct recognition, is a disputed point. But inflammation of its investing membranes, though a rare disease, is recognized in all standard works; as *pericarditis*—inflammation of the heart-purse, or pericardium; *endocarditis*—inflammation of the internal membrane which lines the cavity of the heart. For all practical purposes, they may all be considered as simply inflammation of the heart.

**Symptoms.**—With general febrile disturbances there is more or less acute pain under the left nipple, toward the lower extremity of the breast-bone; this pain radiates toward the left axilla, and sometimes extends downward to the elbow or wrist; the pain is increased by pressing upward against the diaphragm, and by lying on either side. The pulse may be full, hard, regular, and jarring, or small, rapid, unequal, and intermittent; there is great difficulty of breathing, an insupportable sense of oppression, frequent dreams, often attended with very dry and hot skin. The countenance is pale, shiny, and marked

with great anxiety and terror; sighing, sobbing, and hiccough are frequent, and sometimes delirium, convulsions, or insensibility attend.

*Special Causes.*—Among the predisposing causes of this affection Hooper mentions, "the male sex, and the age from ten to thirty." If he had said that males between the ages of ten and thirty are more subject to the disease, his talk would have been rational; but to put down such circumstances as causes is flat nonsense. The most common cause of heart disease is the slopatic treatment, and maltreatment of gonorrhea and rheumatism, which produces a metastasis of uritic inflammation from the remoteness of the joints to those of the heart.

*Particularities of Treatment.*—The hydropathic management is precisely the same as for inflammation of the lungs.

**INFLAMMATION OF THE LIVER—HEPATITIS.**—Acute inflammation of the liver is, in this climate, a rare disease; but it is rather frequent in hot countries, especially with those who indulge freely in flesh-eating and spirit-drinking.

*Symptoms.*—Pain in the right side under the short ribs, increased by a full inspiration, or by lying on the left side; dry, husky cough, shortness of breath, shooting pain about the chest, sympathetic pain in the right shoulder, yellow appearance of the white of the eye, and sometimes yellow skin; the urine is high-colored, and there is either costiveness or diarrhea.

Chronic inflammation of the liver—*Hepatitis chronica* of the books—often manifests some degree of most of the symptoms above-mentioned, but is distinguished by the absence of general fever.

*Particularities of Treatment.*—Apply the wet girdle around the upper part of the abdomen, over the seat of the principal pain; in all other respects manage as in the case of inflamed lungs. The bowels should be thoroughly cleaned in the patient with warm water enemata.

**INFLAMMATION OF THE SPLEEN—SPLEENITIS.**—This is an exceedingly rare disease. It is known by severe pain in the left side opposite the liver, with a sense of heat and weight, and considerable fullness and tenderness; the pain is increased on pressure. The treatment is the same as for inflamed liver.

**INFLAMMATION OF THE STOMACH—GASTRITIS.**—Dr. Good distinguishes acute inflammation of the stomach into two forms, *adynamic* and *typhoid*. In the former variety the fever is high,  $\therefore$  inflammatory; in the latter, low, or typhoid.



*Symptoms.*—With general fever there is severe fixed pain and burning heat at the pit of the stomach; painful deglutition; the pain is increased by pressure over the stomach; frequent vomiting, hiccuping, hiccups and extreme prostration; hard, wiry, rapid, and often irregular and intermittent pulse; intense thirst; restlessness and anxiety; tongue red, parched, and of a glazed appearance. Frequently the inflammation extends to the bowels, attended with diarrhea and great tenderness of the abdomen, constituting the gastro-enteritis of authors.

*Special Causes.*—In a majority of cases gastritis is the effect of powerful irritants or chemical poisons taken into the stomach. It is sometimes produced by drinking largely of very cold water when the body is excessively heated by exertion, especially in persons whose stomachs are overacted by spirituous liquors. Unripe fruits, decayed vegetables, and putrid animal food, sometimes excite it.

*Procuratives of Treatment.*—Apply wet cloths freely to the whole abdomen, of the temperature which feels most agreeable and soothing to the patient. Generally quite cold water answers the best. Small quantities of ice or ice-water may be frequently taken. Drink and dilute of water of a moderate temperature—60° to 70°. Tepid injections are generally necessary; when diarrhea attends they may be used cold. The antiseptic sheet employment should be employed two or three times a day when the febrile heat is general and excessive.

**INFLAMMATION OF THE BOWELS—ENTERITIS.**—This disease, like gastritis, is divided into the adynamic and erysipelatous varieties, by Dr. Good. The former variety is attended with obstinate constipation; the latter with diarrhea.

*Symptoms.*—With more or less of general fever there is severe pain in some part of the abdomen, gradually extending over the whole; the pain is increased by pressure, and accompanied with tension and swelling. The patient lies on the back with the knees drawn up, and can scarcely suffer the weight of his bed-clothes. The bowels are usually obstinately constipated, but sometimes diarrhea attends; and there is constant nausea, or a more or less vomiting of bile and sometimes of highly offensive fecal matter. The pulse is frequent, hard, and contracted.

*Special Causes.*—Long retained and hardened feces; constipating food; irritated poisons; impure air, &c.

*Diagnosis.*—Enteritis is distinguished from colic by the presence of fever. In colic the pain is diminished by pressure.

*Procuratives of Treatment.*—The constipated state of the bowels requires the free employment of copious tepid injections; and other

respects the treatment is the same as for gastritis. It is not advisable, however, to resort to the astringents until the heat and tenderness of the abdomen has been somewhat reduced by the external applications. When severe diarrhea occurs, the warm sitz-bath and cool astringents may be occasionally employed to advantage.

**INFLAMMATION OF THE PERITONEUM—PERITONITIS.**—Authors distinguish three varieties of acute peritoneal inflammation: *peritonitis propria*, when the lining serous membrane of the abdomen is generally affected; *omphalitis*, when the umbilicus is the principal seat of disease; and *mesenteritis*, when the inflammation affects principally that portion called the mesentery.

**Symptoms.**—The usual necessary symptoms of general fever are succeeded by a sense of heat and pain in the abdomen, usually confined to one part, but gradually becoming diffused. There is great tenderness or soreness of the belly, without inclination to go to stool, and a considerable degree of tension and swelling takes on, which uniformly increases for several days; the patient feeling most relief when lying supine on the back, with the knees somewhat elevated. The tongue is not much altered at first; the pulse is small, weak, and very frequent. This disease frequently attends as a symptom of *paratyphoid fever*, which fever is generally the result of bad management during the period of childhood.

**Diagnosis.**—It is distinguished from colic by the pain being increased on pressure, and frequency of the pulse. It is not so easily distinguished from enteritis; but this is of no consequence, as the treatment is in all respects precisely the same.

**INFLAMMATION OF THE KIDNEY—NEPHRITIS.**—**Symptoms.**—General fever, pain in the region of the kidney, extending to the groin and along the ureter to the neck of the bladder. The pain is deep-seated, often dull and obscure, but always increased by the erect posture, by coughing or sneezing, or by firm pressure. It is also increased by unweighting the leg of the affected side. To avoid this the patient instinctively reclines on the affected side, and bends the limb in an effort to relax the muscles of the groin. There is frequent desire to urinate, with great difficulty or inability to expel the contents of the bladder. The urine is generally bloody at first. The tongue is white, the pulse is hard and frequent, the bowels are constipated, the abdomen is tympanic, with vomiting pain, and the patient labors under great depression of spirits.

**Special Cases.**—Acute dysuria, hard water, gravel, violent excitation of the muscles of the back, hardened feces in the colon.

*Diagnosis.*—It may be distinguished from *hemorrhage* by the pain following the course of the ureter, and by the difficulty of urination.

*Procuratives of Tympoural.*—If the fever is not violent, and the heat of the surface is irregular, the warm hip-bath will alleviate the pain. If the heat of the surface is great and uniform, the cold hip-bath will produce the greatest relief. One or the other should be frequently employed, with general and topical treatment, as in other visceral inflammations.

**INFLAMMATION OF THE BLADDER.—CYSTITIS.**—Idiopathic inflammation of the bladder does not often occur. It does, however, sometimes result from the various causes of inflammation, but is more frequently the consequence of gravel, stone, long retention of urine, unobstructed gonorrhea, and such drug-irritants as cantharides, solvent spirits, turpentine, and various essences and talents.

*Symptoms.*—General fever; acute pain, swelling, and tenderness in the region of the bladder; pain and urination increased by pressure above the pubes, or in the perineum; vomiting; tenacious; frequent micturition, with great difficulty in discharging the urine; heat and smarting in the urethra; great general irritability, restlessness, and anxiety.

*Procuratives of Tympoural.*—On account of the structure of the urethral passage, the warm hip-bath should be at first employed for half an hour, or until sensible relief is experienced. This should be succeeded by the cold compress, which should be worn constantly and very frequently renewed, occasionally alternating with the warm hip-bath. The febrile symptoms are to be treated with the wet-sheet pack, followed by the dipping sheet or tepid half bath, as often and whenever they are inflamed by the general heat. The vomiting may be relieved by warm water-drinking, followed by sips of cold water or bits of ice. The tenacious requires copious expectoration of warm water, followed, after the bowels have acted freely, by the injection of as much cold water as the bowels can conveniently receive. The warm foot-bath is useful when there is the least tendency to cold extremities.

**INFLAMMATION OF THE UTERUS.—METRITIS.—METRUM.**—This disease has been divided into two varieties;—*simple*, when occurring in the unimpregnated organ; and *puerperal*, when attacking the womb soon after delivery.

*Symptoms.*—Nearly every symptom characterizing inflammation of the bladder attends also inflammation of the uterus; in the disease under consideration there are the additional symptoms of pain extending with great severity to the hips, and shooting down the thighs, and as

increase of pain in the hypogastric region on the patient's making a deep inspiration. There is also a sense of weight and bearing down, with a frequent, small, and hard pulse.

*Special Causes*.—Suppressed menstruation, extraordinary mental exertion, uterine or intestinal irritation.

*Peculiarities of Treatment*.—The treatment for the preceding Gout is equally applicable to this.

**INFLAMMATION OF THE TESTES—ORCHITIS.**—This affection is readily known by the pain, heat, redness, and swelling of the part affected; it is attended with more or less general fever. It only requires the constant application of water, either by compresses or the hip-bath, of such temperature as is most soothing to the part; and the warmest poultice or tepid full-bath, according to the degree of general heat.

## CHAPTER III.

### ARTHRITIS

ARTHRITIC inflammation comprehends the various forms of gout and rheumatism. The peculiarity of this kind of inflammation consists in its being confined mainly to the blood-vessels—the vessels, and structures around the joints. Its character is also acute, often shifting its seat at marvellous speed from slight causes. The diseases included under the present head may be grouped as in the following arrangement:

Gout.	{	Ergatic, Atonic, Eccident, Neplastic.	Rheumatism.	{	Inflammatory,
					Articular,
					Lamellar,
					Scatous,
					Muscular, Chronic.

**Gout**.—POTTER.—Dr. Good tells us (*Study of Medicine*) "that the predisposing cause of a gouty diathesis, when I first learn itself in an individual, is plethora, or the state of the system produced by full living and indolence." Strongly inconsistent with that remark the same author observes: "There is no disease to which the human frame is subject that has led to such a variety of opinions both in the



ery and traction, many of them directly antagonistic to each other, as the poets; and I may add, there is no doctrine concerning the nature and treatment of which physicians are so little agreed." Nothing can be more conclusive of the absurdity of the whole philosophy of the popular system, and the emptiness of its whole practice, than the general agreement about the producing cause of a disease, and the general disagreement about its nature and treatment!

*Symptoms.*—Regular gout is characterized by a violent inflammation and swelling of the joints, enduring for several days, and gradually subsiding with relief and desquamation of the scales. It usually comes on at least an hour or two after midnight, with excruciating pain in the joints of the great toe, which grows more so the day advances, gradually reaching toward evening, to return with more or less violence the next morning, and so on for several days. The attack is preceded by various symptoms of digestion derangement, and with coldness, numbness, and cramps of the extremities. The attack or disordered form is attended with greater general debility and worse dyspeptic symptoms, while the affection of the joints is but slightly painful and inflammatory. The local affection often alternates with the symptoms of indigestion, when pain in the stomach, nausea, retching, eructations, &c. occur, and the patient is dejected and hypochondriac. Cramps in the trunk and extremities are common, and these may be either spasmodic contractions or clonisms. Sometimes the affection of the joint alternates with a disturbance of the viscera of the chest, producing palpitation, syncope, or asthma; at other times with the head, which is affected with vertigo, cephalalgia, and sometimes even with palsy or apoplexy. The *recidant or retrograde form* is marked by a similar subsidence of the inflammatory state of the joints, succeeded immediately by an affection of some internal part, where is then exhibited the rest of the morbid manifestations. The head, heart, or lungs may be affected, producing the results named in the preceding remark. The *sub-purulent variety* is denoted by an inflammatory affection of some internal part or organ is a gouty catarrh, whether preceded or not by an inflammatory affection of the smaller joints, which, however, always very soon disappears.

*Diagnosis.*—Gout may be distinguished from rheumatism by its characteristic seat in the small instead of the large joints; also by the peculiar manner of attack. When the gouty diathesis is strongly marked, the joints of the toes, and sometimes those of the fingers, are permanently enlarged and discolored.

*Cause.*—The gout is essentially the disease of the germinal and the episte. Whenever this diathesis prevails, there has never

developed in perfectly legible characters, the peevish of "scurvy" being, it is probable, more and more-drinker has never, probably, been affected with any "pain-making element" like unto this scurvy, save the anemia, unless inherited. It is said, indeed, not to be exclusively confined to "high life," as it is occasionally known among the poor and laboring classes. No doubt the wildest and hard-working can eat and drink in such a way as to produce it. Yet we know this is very uncommon; and we must regard the disease as, in a general sense, the legitimate fruit of fashionable yet untempered living. Flesh and wine represent the nature of its predisposing causes. The free indulgence is almost fond of any sort, and the free use of fermented liquors of any kind, are among its prominent causes; and when to these are added concentrated and coagulating food, with sedentary or indolent habits, we have the general condition which produces the gouty diathesis in its greatest intensity. The diathesis sometimes exists in those who eat intemperately and drink temperately, or vice versa.

In gouty subjects, the functions of assimilation so frequently arrest those of elimination, that the surplus materials obstruct the capillaries, and the retained uric acid matters so change the secretory action, that uric acid concretions are formed in and around the matrix of the joints, in the ligaments, tendons, and, especially, in the little sinuous ligamentous masses—which surround the joints, in the cellular substance, and even in the pores of the skin. The joints of the fingers and toes, more especially the latter, are frequently enlarged, hard, and tender, sometimes swollen, and sometimes form fistulous openings, through which issues a whitish purulent matter, consisting mainly of uric acid.

Treatment.—The indications are: 1. To relieve the present pain. 2. To prevent its return. These mean, in other words, to mitigate the pain, and restore general health. Cold or very cold wet cloths should be constantly applied to the affected parts until the pain subsides; or the feet or hands, when inflamed, may be held in cold water until the preternatural heat is subdued. There is no danger whatever of producing metastasis to the internal organs—as bleeding, blistering, drastic purging, etc., do produce—by the application of cold water to the inflamed joints, provided the application is not continued beyond the point of reducing the temperature to the normal standard. The general febrile action attending the paroxysm requires the most direct and strongest means to produce moderate perspiration, followed by the chloride tepid-bath. Water-drinking should be as copious as the stomach can bear without painful distension, and the diet should be of the "hunger-cure" kind.

To overcome the gouty diathesis requires a systematic employment

of the water processes, with the strictest general regimen. A daily pack for an hour, followed by a plunge, dipping sheet, or half-bath, a daily tepid shallow-bath for ten minutes, with the pad douched over the shoulders, a daily leg-bath at about 65° for fifteen minutes, a daily foot-bath at about the same temperature for ten minutes, constitute the average number and strength of the bathing part of the regimen treatment. In addition to all this, the douche may be applied to the affected part with as much force as can be borne without much pain, and moderately along the spine, two or three times a week. With these processes the patient should exercise all that his strength will stand of, abstain of absolute inactivity, and drink all the water the stomach can endure without pain. The diet must be plain and unaccommodated, consisting mainly of vegetables, ripe fruits, and unspiced farinaceous preparations. Nearly all medical authors agree that gouty subjects ought to be put upon an abstemious vegetable diet. Even many writers who insist that man is naturally omnivorous, and cannot subsist on an exclusively vegetable diet, seem to forget their daring theory, and prescribe for this disease what they specially forbid to almost every other.

The bathing part of the treatment may be arranged in various ways, according to convenience, with equal efficacy. The following plan, with such modifications as circumstances will naturally suggest, is adapted to all ordinary cases: In summer, a plunge-bath or dip in the morning, followed by a long walk; at ten a.m., the pack and douches; at four to five p.m., half-bath and pad douches; at half-past eight p.m., wet-bath. A foot-bath may be taken at either nine a.m., five to six p.m., or evening, or at all of those times. In winter, a pack and half-bath in the morning; douches at ten a.m.; half-bath at four to five p.m.; and in the evening, foot-baths as above.

Gouty patients who have been drugged extensively, their nerves enfeebled and their constitutions shattered with opium, calomel, veratrum, digitalis, antimony, &c., must be managed with more care and tenderness. They will not bear so cold nor so vigorous treatment. For such, the pack and dipping sheet, the tepid shallow-bath, and occasionally, when they become unusually tender and irritable, the full warm-bath, followed by the tepid pad-douche, are the best bathing water applications.

Crisis in Gout.—While under treatment, gouty patients are liable to critical discharges in the form of boils, discharges, and particularly to a general feverishness, during which all the affected parts, and sometimes the whole body, becomes highly and suddenly inflammatory and painful. The full warm-bath, or the moderately hot bath, is useful

sure is twice during the hour, soon of critical disturbance, which usually lasts several days. Doubling, if severe, requires the warm wet-bath and cold injections, both need looking but not compresses. Whenever the crisis is severe, all active treatment should be suspended; no cloths, or cold water in any convenient way, may, however, be applied to swollen and painful parts during the crisis the same as at other times.

**RHEUMATISM.**—Like gout rheumatic affections are almost invariably connected with derangements of the digestive apparatus, and generally preceded by intestinal disturbance in the functions of the primary sensitive organs. Some authors, indeed, maintain that gout and rheumatism are inseparable entities, often blending together, or running into each other, in their varied local manifestations. In fact rheumatism might very well be defined as *gout of the larger joints*; while the stiffness, heaviness and rigidity of the muscles, and the thickening and swelling of the structures in and around the joints, are almost as common to other manifestations of the uricæic diathesis.

**Symptoms.**—Inflammatory rheumatism presents all the essential symptoms of inflammatory fever, or synochus, with the addition of extreme soreness and tenderness over the whole surface of the body, and also acute pain in some one or more of the larger joints, or in the small of the back, rendering all motion of the body and limbs extremely difficult and painful. The patient is often unable to get on or off the bed without assistance, and then the effort is attended with great suffering. The articular entity has been called *rheumatic fever*, or *acute rheumatism*. It differs from the former in being attended with much less general pain and soreness, and a much greater inflammatory action and swelling of some one or more of the large joints and surrounding muscles, generally the hip, knee, elbow, or shoulder. *Lambrago* is the variety in which the pain is felt chiefly in the limbs, usually shooting upward. In the form called *arthritis*, or *neuralgia*, the pain is felt mostly in the hip-joint, the disease also being attended with an evacuation of the urine or torpor of the affected side, or an enlargement of the limb. In the variety called *muscular*, the pain is experienced chiefly in the muscles of the diaphragm, or in the intercostal muscles between the ribs, when the pain is greatly increased by a full inspiration. This form has been called *pleurodynia*, *pleuralgia*, and *spasmodic pleurisy* by authors; and not infrequently mistaken for *real pleurisy*, and the patient bled, bled, and bled, not a little to his disadvantage. Chronic rheumatism is distinguished by pain, rigidity, and weakness of the larger joints and surrounding muscles, accompanied with no regular



fever, and less slight increased intere pericapsula, and with very little perceptible swelling. This form of rheumatism is almost always induced temporarily by warmth, hot applications, stimulating liniments, &c., while all the other forms are frequently aggravated by these.

The fever attending rheumatic attacks is peculiarly unaccompanied with frequent and irregular attacks, which, however, do not prove in any sense critical, nor exert any marked influence upon the course of the disease.

*Cause.*—Unusual exposures to wet and cold while the body is in a state of exhaustion by exertion, seems to be the general producing cause of all forms of rheumatic affections.

*Treatment.*—The proper management of the febrile or inflammatory variety, is almost identical with that of inflammatory fever. In some cases where the joint or joints most affected are so tender that the least motion produces excruciating pain, a combination of rest and soothing processes will give prompt relief, as the warm fomentation, or warm douche, followed by the coldest wet cloth or poulticed ice. The articular form requires a less vigorous application of the wet sheet, or other general cold treatment, but a more persevering application of cold compresses to the affected joints. Lavages and sitz-baths, and that form called *emmoirer*, in addition to moderate general treatment, associated with the greatest facility by the hot fomentation to the parts affected with pain, stiffness, and rigidity, followed by the cold extended compress, or, what is better still, the warm douche followed by the cold, the temperature and force of the stream to be regulated in some degree by the patient's feelings. Chronic rheumatism, in whatever form manifested, requires the same general management as just the leading accurate indication being to restore the general health. As constipation is an almost universal concomitant or antecedent circumstance, especial attention must be given to the state of the bowels, which should be kept free by means of injections, and an opening pill five.

So long as the venereal virus rages among the medical gentlemen of the allopathic school, so long will the hydropathic physician be continually called upon to treat many miserable varieties of chronic rheumatism, made such by the misery with which the patient has been doomed to the treatment of some *venereal disease*. Such patients are peculiarly sensitive to vicissitudes of weather, and do not bear so cold treatment as those whose systems have never been overstimulated. The wet-sheet pack, followed by the tepid half-bath, once a day, the tepid half-bath followed by the hot douche, and the occasional employment of the warm-bath, followed by the hot douche or shower, constitute the best general plan of combating venereal rheumatism. Some-

times the treatment will set the system of the animal, which has long lain dormant, as it were, in the system, in action, and reproduce subvillus, spungy gums, foetid breath, mucous taste, or other evidences of mercurial action. During this mercurial excitement, no very active cold treatment should be employed. The tepid sponge-bath, or full-bath, with such local applications as the local pain demand, the temperature being such as feels most agreeable to the part affected, may be employed until the manifestations of mercurial action subside, when the regular treatment may be resumed. When the whole surface becomes extremely susceptible and sore, the hot-bath, followed by the tepid wash or pad douche, should be employed.

The general regimen applicable to goat is equally so to chamois.

## CHAPTER IV.

### INDIGESTION.

Whether in the rudiments of civilization and the luxury of plebeianism exist, *Dyspepsia*, in most of its protean shapes, seems to be the general condition of the individual. I do not agree with Dr. E. Johnson (*Results of Hydropathy*) that "constipation is not a disease of the bowels;" nor do I coincide in his notion that mental excitement is the sole cause of indigestion. I admit, however, it is too strong several very efficient causes of that extensive train of morbid results which we call *dyspepsia*.

Nostricians have enumerated more than one hundred distinct diseases, to which they have assigned specific characters, and which they have scattered through various and dissimilar genera, orders, and classes; yet each is nothing but a more circumstantial or imperfect performance of the digestive function. Thus Dr. Gould, in his elaborate system of pathology, carries such symptoms of digestive derangement as heartburn, water-brash, flatulency, depressed appetite, &c., constipation, tenderness, &c., to the rank of idiopathic entities. I shall undertake to associate all these manifestations of one general morbid condition into a more natural arrangement, and most of them in the present chapter. The propriety of thus grouping together several causes of diseases which have been usually considered not only as idiopathically digestive but as demanding widely different and even oppo-

the methods of treatment, is enhanced by the fact that they are all really cured by the same general plan of hydropathic medication.

*Diseases of Indigestion.*

Tympania	Morbid Appetite, Morbid Thirst, Nausea, Flatulency, Distention, Sick Headache.	Colic	Illness, Faintness, Spasmodic, Infarction, Feverish, Illness, Gastric Stiffness, Stomach, Thirst.
Liver Complaint	Chronic Hepatitis, Gastritis, Gallstones, Bile-ducts.	Diarrhea	Stomach Stiffness, Stomach, Thirst.
Dysentery	Tenderness, Tumor of the Throat, Frequent Gases.	Intestinal Concretions	Stomach, Colic, Spasmodic.
Cancer	Stomach Tumor, Painful Cancers, Tumor Cancers.	Worms	Stomach Worms, Stomach Worms, Stomach Worms.
		Dysentery	Stomach Stiffness, Stomach Stiffness, Stomach Stiffness.

That the majority of the diseases named in the above table are symptomatic of indigestion all will allow; but those who are accustomed to regard worms as natural to the alimentary canal, and those who consider the ulcer as a local affection, will object to the tender arrangement. But I will venture to assure every physician who will carefully investigate the subject, that he will find the stomach and bowels of children or adults infested with vermin is very nearly the rule that foul excrement and crude ingesta cause disordered digestion; and if he will attentively study the history of hemorrhoidal affections, he will find them, in some form, almost as general as, and almost invariably preceded by, constipated bowels. Still greater will be the dissent of those who have assigned epidemic or spasmodic cholera to depend on specific contagious causes, electrical or vegetable states of the atmosphere, or planetary or other unaccountable influences, to the idea that all the cholerae of medical books are dyspeptic affections. But, whatever may be their predisposing or exciting causes, it is sufficiently apparent that the actual condition of the bowels is that of extreme development and intense irritation of all the organs auxiliary to digestion.

**DIAGNOSIS.**—Depressed appetite, abnormal thirst, flatulency, acid eructations, heartburn, or water-brash, irregular bowels, and sick head-

acts, are among the multifarious symptoms of dyspepsia; yet the disease may exist with the absence of either one or the majority of them.

*Symptoms.*—Fulbness or irregular appetite, constipation, or diarrhoea, or those states alternating, sense of weight or other feeling of distress after eating, food digested with difficulty, depressed spirits, disturbed sleep, occasional pain or tenderness in the epigastrium, a feeling of hunger, which is relieved by taking food, aversion to exercise of body or mind, are symptoms which, variously combined, designate the disease. Usually there is occasional palpitation or throbbing of the heart, forced respiration, and slow, irregular, or intermittent pulse.

Doctar Gully and some other authors distinguish dyspepsia into the nervous and nervous varieties. The term, *nervous*, is applied to the disease when occurring in persons of irritable temperament, with a large development of the brain and nervous system; and the term, *nervous*, is applied to the disease as it appears in persons of more torpid or phlegmatic temperaments. The former generally results from mental shocks, excessive exertion, intense study, violent passions, and is attended with great pain or uneasiness in the stomach, spasms, gurgling or sinking sensation, excessive appetite, &c. The latter results more especially from sedentary habits and excesses in eating and drinking, and is attended with torpid bowels, and but little actual pain in the digestive organs.

*Treatment.*—No other disease presents itself under so great a variety of complications; and although the principles which regulate its treatment are very simple, there is an unlimited opportunity for the exercise of skill and tact in the management of a dyspeptic mind. Usually we have to deal with feeble tempers, despondent minds, strong morbid appetites with weak resolutions, all of which circumstances are aggravated by the patient having previously dined with all sorts of doctors, and swallowed every thing he could read of in the newspapers in the shape of medicine.

All the resources of hygiene must be drawn upon, and adapted to the circumstances of each particular case. The nervous, feeble, restless individual, who is all activity with little strength, who has a constant disposition to move with no power to endure, must take moderate water-treatment, exercise gently, prefer sailing, riding, &c., to active walking, and sleep all that he is inclined for, even though it be late in the evening, or at other times of day; while the torpid, quiet, but more enduring person should employ more powerful water treatment, rise early, walk much, and pursue gymnastics for amusement, unless he can find amusement in some light kind of manual or mechanical labor.



The diet should be more plain and simple as the disease is more advanced and serious. Regularity in the stool and dejections is of first importance. The patient should, if possible, go to stool at the same time of each day, and if the diet does not, in a very few days, produce regularity in the discharges, cool or cold injections should be employed daily, soon after rising. As a tonic effect is always desirable, cool or cold water should be employed, whether the bowels are loose or constipated, except when affected with colic or griping. The sitz-bath and the abdominal compress are the important and ever-necessary local baths. The former may be resorted to two or three times a day, for ten or fifteen minutes, the temperature as cold as the patient can bear without producing a permanent chill, or disagreeable feeling of weakness and stiffness. The moist towel bandage is the best; the wet part should pass round the body, when it can be worn without ineffectual irritation or chilliness of the back; otherwise it should only extend across the abdomen from one side to the other. Foot-baths should not be neglected when there is a tendency to cold extremities. The most important general baths are the partial or complete wet-sheet pack, according to the general heat and reactive power, and the tepid half or shower-bath. The plunge or douche may be employed under the restrictions heretofore specified; the dripping sheet is a good substitute for either of the other general baths when it is expeditious.

The best fermentation to the abdomen is serviceable whenever indicated by severe headache, quitters, general restlessness, nausea, vomiting; and sick headache is relieved by drinking warm water, followed by sips of cold, and, in severe cases, the abdominal fermentation. When sick headache occurs periodically, warm water should be copiously drunk on its first attack, to dilute and wash away the offending bile or other acrid fluids as soon as possible.

A good combination of baths for full or active treatment in an ordinary case, would be the following daily: Tepid half-bath five minutes and pulley sheet; wet-sheet pack, followed by moderate douche, plunge, or dripping sheet; sitz-bath at 60°, ten minutes, followed, after an hour's interval, by a foot-bath at 72°, five minutes; the first to be taken on rising, the second from ten to eleven a.m.; the third at four p.m., and again in the evening. The wet girdle should be wet and supplied after each bath, and again at bedtime. In protracted cases requiring a long course of treatment, it is advisable to omit the wet bandage occasionally for a few days, and then resume it again.

In many cases of dyspepsia there is a weak and relaxed, or a rigid and contracted state of the external abdominal muscles, especially frequent in those who have been addicted to cramped bodily positions, in-

these mental excitement, sexual excess, or the use of narcotic stimulants, as tobacco and alcohol. The free indulgence in tea and coffee also conduces to it; and fine, overexerted food is among its producing causes. These cases require local manipulations, as kneading, pounding, rubbing, etc., the lower part and external muscles of the abdomen, not with wildest violence, however, to same point. A trotting horse affords a good exercise. Climbing, swimming, and walking rather fast over an uneven surface, are also peculiarly beneficial exercises.

**LIVER COMPLAINT.**—A morbid condition of the liver is as constant and as necessary a concomitant of indigestion as is a morbid condition of the stomach. In some forms of deranged digestion the stomach and bowels appear to be the seat of the more prominent morbid phenomena, and in others the liver presents evidences of being disproportionately affected. Its pathological conditions are various, but its functional derangements may all be comprehended under the general term of *liver complaint*.

**Symptoms.**—*Chronic hepatitis* is a state of passive or chronic inflammation of the organ. In addition to a variety of dyspeptic symptoms, there is some of weight, fulness, or other pain in the region of the liver, which is increased by deep pressure; sometimes the pain is referred to the left side, or other parts to the right shoulder, or between the shoulder-blades; there is frequently aching, irregular, and fugitive pain along the bowels, and through the chest; some degree of enlargement or hardness is usually obvious to the touch under the short ribs of the right side; the countenance is sallow; the bowels are relaxed; the stools are clay-colored; the patient is torpid, inactive, and desponding, and there are occasional attacks of jaundice. Dropsy frequently follows this form of diseased liver. It is also generally attended with a dry, hoarse cough, and a slight husking, or spitting of a thick, tenacious mucus, especially in the morning, when the sputa appear dark and carbonaceous, as though charcoal-dust had been diffused through it. The cough is immediately cured by the enlarged or swollen liver pressing upon the diaphragm, and the morbid secretion of the mouth or throat is owing to the irritation of congested and solid bile. This cough and expectoration may be distinguished from that which has its seat in the lungs or their appendages, by the slow pulse, and the prominent hepatic or dyspeptic symptoms.

**Jaundice**—the icterus of the books—has been commonly distinguished into the yellow and black, or green, according to the discoloration of the skin from impacted and partially putrescent bile, to which some authors have added the slate-colored of bilious-pneumonia by a congestion of

*bile*; *gall-stone*—resulting from obstruction of the bile-ducts from inspissated bile; *spasmodic*—produced by spasmodic stricture of the bile-duct; *hepatic*—resulting from schismus or induration of the liver; *jaundice*—occurring in infants; and *black vomit*—the regurgitation of morbid bile into the mouth, and its ejection, mixed with dark, grumous blood. *Jaundice*, in a general sense, is known by debility, hepatic tenderness, heat and pricking of the skin, bitter, nauseous, or acid taste in the mouth, yellowness of the conjunctivæ of the eye, and subsequently of the whole surface of the body; the bowels are irregular, the urine high-colored and yellowish, the pulse is usually slow and weak, the mind is drowsy and gloomy, or listless, wandering, and irritable, and there is ferment heat and dryness of the skin. When the disease is protracted, the skin turns greenish, brown, livid or leaden, blotches appear in different parts, and the discharges from the bowels are dark, purky, and bloody. The speed or *intermittent cause* of jaundice is torpor or inactivity of the liver, by which the solid particles which should be secreted in the liver, and passed off in the form of bile, are left in the blood.

The existence of *gall-stones* is known by the more and sometimes excruciating pain they occasion when passing through the common bile-duct from the liver into the duodenum; this pain is felt in the epigastrium, extending to the right side and back, and occurs in severe paroxysms, with intervals of comparative ease. The pain suddenly ceases when the calculus cracks the intestine.

*Dyspepsia* is an inflammatory state of the mucous membrane of the duodenum, at the point where the bile enters this portion of the intestinal tract; it is occasioned by the contact of acid and irritating bile, and known by a sickness, waking, growling sensation just below the pit of the stomach, with tenderness to external pressure, often so great as to make the weight of the hand or of the bedclothes painful.

*Treatment*.—All that has been said in relation to the treatment of dyspepsia, applies with equal force here. There are, however, some modifications of the general plan of management required in some unusual stages of the disease, or rather group of diseases under consideration. The state or condition of liver disease described as chronic hepatitis, in which the bile is still imperfectly excreted, but its quality exceedingly vitiated, requires more especial attention to the stomach and bowels. Warm water clysters are serviceable to disengage the biliary ducts, whenever clogged, bitterness in the mouth, and actual sense of fulness in the right side indicate obstruction; and if the bowels are active, with general fulness and tenderness, tepid aqueous should be

freely employed until these symptoms are reversed, when cool or cold ones should be substituted.

Jaundice presents many complicated varieties of morbid phenomena, all of which are usually denominated "nervous debility;" a term not entirely inappropriate, since the thick viscid blood, consequent on the retained matter of bile, being unable to penetrate freely the minute capillary vessels, where nutrition of the nervous, as well as the other structures, is effected, the nerves are really impoverished for want of sustenance. In this form of diseased liver, too, the skin is dry and feverish, or clammy and cold, in either case weak, obstructed, and bilious, yet bloodless. Reactions, though sometimes acute and prompt, is always feeble and transient; hence we are to begin the general treatment with the gastric processes, employing water of a mild temperature, gradually intensifying the force and lowering the temperature of the lutea, as the superficial circulation of the patient improves. The hot-bath may be commenced at about 85° or 90°, and gradually reduced to 75° or 70°; the sitz may be employed at first at 75°, and by degrees lowered to 60°; the cold sheet hot-pack, or even warm sheet pack, is admissible at first, gradually proceeding to the ordinary wet-sheet envelopment as the skin becomes irritable. In some cases, where there is considerable tendency to feverishness, the whole body will readily warm up in the wet sheet, and the glow increase for twenty or thirty minutes, when it will begin to decline, in spite of any amount of extra bedding. Such patients should be taken out of the pack as near the height of the reaction as possible, and bottles of hot water should be applied to the feet, and in extreme cases to the wrists also, to enable them to remain still longer enveloped. The dripping wet-sheet is one of the best appliances in cases of extreme torpor and bloodlessness of the surface, the temperature not being so cold as to leave a permanent chill.

It should be particularly borne in mind, that in patients in the condition of "nervous debility" under consideration, will tolerate extremes of treatment, be they hot or cold. There is not sufficient blood in the superficial capillaries to resist against very cold impressions, and for the same reason steam or vapor-bathing, or the ordinary hot-bath, has a positively relaxing and debilitating effect, a vigorous capillary circulation being just as necessary to defend the body against one extreme of temperature as another.

The existence of gall-stones only requires the hot frictions and warm sitz-bath, with copious warm water drinking, to facilitate their passage, and mitigate the pain.

As dyscholia is caused directly by morbid and acrid bile, it will do



appear whenever the beneficial secretion of the liver is restored. Sometimes it disappears when the condition of the liver changes from chronic inflammation to jaundice—from marked action to no action. Occasionally alteration takes place from the long-continued corrosive effect of purid bile, resulting in death suddenly and unexpectedly.

**MISCELLANEOUS.**—Teething, tooth-edge, toothlessness, and deformity of the teeth, are placed by Dr. Good in the catalogue of diseases belonging to the gums before us. Teething, it seems to me, is rather a symptom than a morbid process; and, although often accompanied with much pain and suffering, and various diseases, these are all owing to some obstruction or irritation in the digestive organs, producing a general feverishness of the system and an inflammatory state of the gums. Tooth-edge is the peculiar itching or uneasy sensation experienced in the teeth from some kind of grinding or jarring motion, or from certain acids and serid substances. Toothlessness results from constitutional defect, external violence, internal drug-medicines, decay, or old age. Deformity of the teeth is generally an unfortunate inheritance, for which the child is indebted to the bad dietetic or other habits, or infirmities, of one or both parents; a great degree of deformity, however, may be produced by bad habits in the dentate and medical management of the child itself.

The diseases properly coming under the present head are, toothache, tender teeth, and excessive pain, all specially connected with or dependent on depressed or impaired digestion. The history of all the animal creation, and of the whole human race, shows that there is a most intimate relation between sound, clean, symmetrical teeth and healthy, free, vigorous parts, and correct dietetic habits. The universally healthy condition of the teeth of wild animals, and the general rotting state of those of domesticated animals illustrates this fact sufficiently.

The existing cause of toothache is usually "taking cold." It may exist in connection with caries or ulceration of the teeth, or with extreme irritability of the dental nerve without structural decay. The cure may be found in holding tepid or cool water in the mouth, renewing it as often as it becomes quite warm, rubbing the face and neck with the hands dipped in cold water, the shallow foot-bath, and absolute fasting until the pain abates. Very few toothaches can hold out against a fast of twenty-four hours, even if no other medication is resorted to. Rubbing the teeth and gums smartly with a brush dipped in cold water, even until the gums bleed freely, often relieves toothache promptly.

Tumor of the teeth consists of concrete saliva hardened by the earthy

materials which it secretes. The remote cause is undoubtedly the enormous amount of earthy or extraneous ingredients taken into the system with the food and drink, more especially derived from hard water; and the immediate cause is deficient mastication, the food being soft and sloppy, and not demanding sufficient exercise of the teeth to keep them clean. In many instances the mouth is most badly disfigured by tartarous concretions which have destroyed the gums and alveolar sockets. The teeth-bush, aided by some mild dentifrice, is the best palliative we can employ. To effect a cure, the teeth must be cleaned by a careful dentist, and then the denture habits must be placed under physiological law.

*Extruded gums* may be either soft, spongy, or firmest, or in the form of fibræ, resembling lumps or condensed knots; they are always symptomatic of misery, or some disorder of the digestive organs. They can only be cured by attention to the general health. Sometimes the extravasation, when considerably protuberant, have been excised with caustic, ligature, or the knife; but unless general health is restored, they will soon grow again.

*Colic*.—All those diseases comprised under the generic head of colic, or belly-ache, are characterized by griping pain in the bowels, usually in the region of the umbilicus, and attended with vomiting and constipation.

*Symptoms*.—The species called *ilic passionis* is accompanied with painful contraction or drawing in of the navel, and spasm of the muscles of the belly; the vomiting is exceedingly violent, ejecting bile from the duodenum, and often stercoraceous matter from the bowels; and even

some cases the injection introduced into the rectum have been ejected by the mouth. This is the disease called *intussusception* or *intussusceptionis* in medical books, and so denominated from the circumstance that one portion of the affected intestine, constricted and lessened in diameter, has fallen into another.

*Painful milt*—known also as *Danish colic*, *colica picina*, and *colica micthalgia*—is so termed from the remote cause being the introduction of lead into the system, and hence mostly confined to painters. In the neighborhood of smelting furnaces, pigs, poultry, and other animals are said to be affected with this complaint. It is evoked by a pain at the pit of the stomach, at first dull and remitting, but gradually becoming more violent and continued, and, as it increases, extending upward to the anus, and downward to the navel, back, hips, rectum, and bladder, and frequently extending to the thighs and legs. From the navel it sometimes shoots with so much violence to each side

that the patient feels as if some person were eating him in two. The external muscles are extremely sore and tender, and can scarcely bear the slightest touch. Momentary relief is occasionally experienced after the vomiting of acid bile and mucus, but this pain soon returns. In about a week or less, if recovery takes place, relieving events appear, and the bowels discharge large quantities of excrement, consisting of hard lumps, or crystals, mixed with blood and dirt-colored mucus, after which the patient is considerably relieved. Paralysis of the fingers, hands, and feet comes on after several attacks.

It may be of great consolation to wine-bibbers to know that litharge, and other preparations of lead, are extensively employed in the manufacture of sweet and acid and warm, and that where such wines are freely drunk, this kind of colic is very prevalent; nevertheless, such is the fact.

Dr. Samuel Cooper, author of a surgical dictionary, remarks: "During the sixteenth and seventeenth centuries, when preparations of lead used to be given in large doses medicinally, the colica piccorans and purgans, in their severest form, appear to have been very frequent."

*Wind-colic—colica flatulenta*—is entered by acute pain extending to the pit of the stomach, accompanied with great fulness and distension, often impeding respiration; it is relieved by pressure, expulsion of wind, or bending the body forward. It is chiefly produced by cold or surfeit drafts, long fasting, grief, fear, &c., and is a frequent attendant on dyspepsia and chronic diarrhoea.

*Surfeit-colic—colica acria*—is usually produced by loading the stomach with an enormous quantity or indigestible quality of food. Occasionally it results from poisonous vegetables or animals taken into the stomach. Various kinds of mushrooms, and several species of water-fishes, are known to have been followed by an attack. It is characterised by pain, nausea, and distension, with vomiting takes place, terminating afterward in a griping diarrhoea. There is also, in some cases, an eruption of the skin, with commotion in the throat, an insupportable sense of suffocation, swollen eyes, extreme thirst, and a burning heat over the whole surface.

*Constricted colic—colica constrictiva*—is caused by indurated faeces, or other intestinal concretions, and is known by severe griping pain, constant constipation, great tension with little distension; the vomiting sometimes accompanied with faeces; the countenance attended with bloody streakings, terminating, when not fatal, in a free discharge of the infarcted matter.

The constriuctive species—*colica constriativa*—results from a permanent stricture existing in some part of the alimentary canal. Its symptoms are—a sense of stricture; a few legs of distension gradually passing off

by the stricture: the bowels hard, and discharging with difficulty small liquid stools. In the early stage of the disease there are cold pains and tenderness, alternating with bilious diarrhoea; after the disease has existed some time, solid faeces are rarely passed, and only after a great effort, and they are of an extremely slender caliber. Patients have been known to resist more than thirty days without any evacuation from the bowels.

*Treatment.*—The general management of colic consists mainly in the employment of copious warm water injections, to free the alimentary canal of its accumulated contents, composed with frequent hip or half baths, which may be either hot or cold, according to circumstances, to quiet pain, and remove whatever inflammatory or spasmodic condition may exist. In some cases, hot water proves the best relative, and in other cases, very cold water is most efficient. It is fortunate that in almost all cases, and probably in every case, when warm water fails in giving relief, cold water promptly succeeds. The desirable temperature can gradually be very readily determined by the febrile or non-febrile character of the symptoms. If there is considerable heat and great nervous heat the abdomen, with a general feverishness of the whole body, cold or very cold water is most appropriate; and when the whole body is inclined to coldness and torpor, and the abdominal pains are gripping and periodical, hot water is indicated. In mild cases, the hot fomentation, followed by the cold enemata, will remove all local distress. Whenever the hip or half bath is employed, the abdomen and back of the patient should be thoroughly rubbed during its administration. The moderate drinking of water, or tepid water, secures the relaxing effects of the other processes.

In the first named variety—*colica strica*—the stricture of the intestines is sometimes so great as to produce a degree of strangulation, liable to be followed by inflammation and gangrene, especially if drastic or irritating purgatives are resorted to, as they generally are in misadvised practice. The faeces in this, as in the other forms of colic, may be so hardened as to require the handle of a spoon, or some similar contrivance, to remove them from the rectum. For these reasons, as large a quantity of water as the bowels can well receive should be injected, and the process frequently repeated. The warm steam bath, followed by the cold dock, is excellent as a local application.

The second variety—*colica colica*—is subject to all the treatment required for the first form, through defensive and supporting management. The warmest pack, cold or warm, according to the extreme heat or coldness of the patient, followed by the dripping application or used, and this by the dry sheet and dry band rob-



diag. will best accomplish the cleansing and strengthening part of the medicinal plan.

The third variety—*wind*, or *flatulent colic*—the best fermentation and a single injection are usually sufficient to remove. If it resist these means, the warm duclie to the abdomen, followed by the dash of a pint of cold water to the belly and legs, will effectually disperse it.

The fourth variety—*colic*—requires a thorough warm water enema, a free injection, and a rigidly abstemious diet, or absolute abstinence, for a few days.

The fifth and sixth—*colic* and *colic*—forms, are cured by a frequent and persevering employment of tepid injections and sin-baths, as leading processes, assisted by hot fomentations, the wet sheet pack, and other appliances, as the general symptoms indicate. Especial attention should be given to rubbing, kneading, gently pushing, or otherwise exercising the muscles of the loins and abdomen. The diet should be of the coarsest kind—cracked-wheat, rye-meal, Indian gruel, hard wheat-cake *hacala*, good fresh ripe fruits, etc.

**CHOLERA.**—The group of diseases comprehended under this generic term, is characterized by vomiting and purging, gripings in the bowels, spasms in the arms and legs, often flatulent eructations and defections, with great anxiety and prostration. The usual succession of symptoms is—Vomiting, purging, spasms, prostration, and collapse. In the epidemic cholera, however, the vomiting is generally preceded for hours or days with looseness or diarrhea. Cholera is distinguished from colic by the presence of purging, and from diarrhea by the absence of vomiting in the former disease.

In the Asiatic variety—commonly known as *cholera asiatica*—the vomiting and purging are copious and frequent, with a redundancy of bile. In the severest cases the vomiting is vehement, the dejections very painful, the spasms violent, and the agony intense. In the more cases the extremities are cold, the pulse is small, frequent, and an-quiet, and the patient sometimes dies within twenty-four hours from the first attack. The exciting causes are usually a surfeit, acid bile, indigestible articles of food, drastic purges, exotic drugs, especially tartar emetic, etc.

The *fluorid* form—*wind cholera*—is particularly characterized by the absence of bile in the discharges; the vomiting and purging are more; but in these small there is great and oppressive flatulence and retching, with windy eructations and defections. This form of the disease is rather peculiar to dyspepsia.

*Spasmodic cholera*—called also malignant, epidemic, Asiatic, Indian,

ble, and postmortal shivers—is generally epidemic, though not contagious. The first symptoms are usually experienced during the night; sometimes commencing with a slight general uneasiness and moderate diarrhea; at other times the symptoms come on violently, and follow each other rapidly. In fatal cases death usually occurs at some period between six and twenty-four hours; in a few fatal cases the patient lingers two or three days. The ordinary course of symptoms is, more or less diarrhea; the discharges at first feculent, but soon presenting the appearance of rice-water or gelatin; there are flying pains, or sense of coldness in the abdomen, as if purgative medicine were about to operate; the countenance is pale; there is nausea, vomiting, prostration of muscular power, and nervous agitation; cramps in the legs, arms, ribs, and abdominal muscles, more or less severe; small weak pulse, intense thirst, and urgent desire for cold water; in most cases cold clammy skin; all these symptoms may appear successively or all more simultaneously. In some cases the precursory symptoms exist for eight or ten days; and sometimes the patient is prostrated at once. When the disease occurs on suddenly, the cramps usually commence in the fingers and toes, rapidly extending to the trunk; the eyes are sunken, and surrounded by a dark circle; there is vomiting and purging of white matters mixed with blood; the features are sharp and contracted; the expression of countenance wild and convulsed. The face, extremities, and often the whole surface of the body, manifest a mottled intensity of a leaden, bluish, or purplish hue; the extremities are shrank, the pulse thin, the pulse thready or wholly imperceptible at the wrist, arm, axilla, temple, or neck; there is great tenderness, incessant restlessness, severe pain to the epigastrium, loud rumbling or growling, difficult and oppressed breathing; difficult inspiration, with short and convulsive expiration; voice hoarse, whispering, or nearly suppressed and plaintive; the tongue is white, cold, and flaccid, and the external temperature often sinks below  $60^{\circ}$ ; convulsions recur at short intervals, or a convulsed tremor exists. The secretions of bile, urine, tears, and sweat are entirely suppressed, and a cadaverous odor exudes from the body. The patient retains his faculties to the last.

Extent of the above symptoms may be disproportionately severe, or it may be entirely absent. Those usually regarded as pathognomonic are, watery discharges, the appearance of the countenance or surface, thirst, coldness of the tongue, and coldness at the wrist.

The fourth variety—*cholera infanum*—is peculiar to infants, and prevails extensively during the warm season in nearly all of our cities. In ordinary cases the diarrhea precedes the vomiting for several days; but in severe cases vomiting also occurs from the beginning. The dis-

discharges at first are composed of ordinary fecal matters; but, as the disease progresses, they become mucous and variously colored, from a dirty white to a brownish, and sometimes greenish hue. Sometimes these discharges are frothy, like yeast, and mixed with the food, which passes the intestines almost unaltered; in some cases the discharges are bloody, as in dysentery. There is raging thirst, the tongue is dry, but acutely furred; the febrile heat is very irregular; the body emaciated; the skin grows dry and ash-colored; the abdomen is very much heated toward the termination of the disease; the pulse is small, weak, and frequent throughout. It usually runs its course in about three weeks.

*Treatment.*—Bilious dysentery in its early stage requires copious warm water injections, and free warm water-drinking, to cleanse the whole secretory canal as promptly as possible. When the discharges have existed for a considerable time, and the patient is greatly exhausted, or after the employment of the cleansing processes above named, frequent sips of cold water should be taken, and moderate cool injections employed after each defecation. The cool compress should be applied to the abdomen, and very frequently changed. When the griping is excessive, the hot hip-bath should be resorted to; and the cold hip-bath when there is much external heat and tenderness of the abdomen. The hot-direct pack and the passing lead-bath are appropriate and very efficacious, and often singularly soothing processes, after the stomach and bowels are freed of their irritating contents.

The *fulcrant* form may be relieved by hot fomentations or hip-baths, and moderately cool injections.

In indicating the appropriate hydropathic treatment for spasmodic dysentery—the most frightful, yet not the most fatal pestilence of modern times—I feel no small degree of embarrassment; not that I regard the Water-Cure, which I claim to be a sufficient system in all other functional diseases, as an exceptional failure in this, but because it has no power to reclaim the dead; and in many cases an attack of this disease is a death-stroke. Persons of gross habits, the intemperate, the debauchees, the rancorous liver, and those whose dietetic habits have been peculiarly enervating and debilitating, are especially and almost exclusively the subjects and the victims of this pestil scourge. The source of the disease is an intensely irritated or peculiarly inflammatory state of the mucous membrane of the stomach and bowels; the dysentery, which the drug-physicians regard and treat as though it were the essential disease, being a mere incident, effect, or symptom of this general morbid condition. That debility and obstruction in the primary nutritive functions constitute the essential condition, while inflammatory

action and serious discharges combine the leading manifestations of the disease, is rendered probable, if not proved, by the fact, that no individual of correct dietetic habits—such habits as are advocated in this work—even yet had the disease. This is conclusively true of the Germanists and Vegetarians of New York, at all the seasons—1832-34 and 1844—that it has prevailed epidemically; and as far as I can learn—and I have taken no little pains to ascertain the fact—throughout the whole world.

When I say that dietetic errors are prevalent among the producing causes of idiopathic cholera; I do not mean exclusively habits of gluttony and intemperance. Many persons, intending to diet preventively, have died in exactly the way to produce it. Medical councils, boards of health, and sanitary committees have generally given authoritatively more bad than good advice, both as respects avoiding the disease and curing it. The preventive measures officially recommended in New York in the hot season of 1849, consisted mainly of “fasting most of the day, the same both occasionally, a greater proportion of animal food, and less, constituting, ferments food.” Under the delusion that “the disease was the cause of all the symptoms which followed, and that if the disease could be prevented, no cholera could come,” rice, dried beef, baked fish, &c. were used two or three times a day, and the almost entire prohibition of fruits and vegetables of all kinds, became substantially the preventive plan of being—a plan which was faithfully followed, even unto death, by many persons and several physicians in this city. The true preventive plan is exactly the opposite in every respect.

The drug-treatment of cholera would be amazing for its necessities, did its consequences not border so closely on the trivial. A great variety of plans of medication, directly opposite to each other, have been tried with equal success, which fact ought to be conclusive with every unprejudiced mind that the whole is purely empirical. Let us place a few of the opposite plans of treatment recommended to us on high authority in juxtaposition: Bleeding and antimony—opium and brandy; copious libations of cold water—powerful internal stimulants, as pepper and cayenne oil; masses of mustard, ipecac, ammonia, and blue vitriol—lead-water, or bits of ice, to stay sickness at the stomach; cathartics, as calomel, castor-oil, colocynth, jalap, senna, and croton oil—emetics, as sugar of lead, lime-water, and nitric acid; hot water, fermentation, dry heat, wine, and alcohol—cold water, solutions of potash, soda water, and effervescent draughts; mustard plasters and blisters to the stomach, caustics to the epæm—large doses of opium and strychnine; inhalations of oxygen gas—injections of saline



solutions into the veins: potassium and mercuric frictions—alcohol, and the calomel air-bath, &c., &c.

In the early stage of the disease, a free injection of tepid or rather warm water should be administered frequently: meanwhile the throat should be assuaged, and the heat of the stomach mitigated with frequent lot tendence draughts of cold water, or bit of ice, and the cold compress to the abdomen, well covered with dry, soft flannel. Before the surface becomes very cold, or the patient sinks into collapse, the dripping wet sheet, followed by the dry sheet, and both accompanied with active and overpowering friction, should be employed: the wet sheet peck also works admirably in the early stages. If the patient is too weak to bear these processes, and is in the later or collapsed stage, the surface should be well rubbed with a cold wet towel, and this succeeded by active friction with dry soft flannel or the dry hand: the injections should then be frequently employed, but of cool water, and moderate in quantity. In the very outset of the disease, provided there is much nausea and retching, I would employ a brisk warm water enema, and follow it with sips of cold water according to the degree of thirst: the cool or cold hip bath is also a valuable assistant in any stage of the disease preceding the collapse. When the spasms are violent, the external friction should be proportionally vigorous. In bad cases, two or three men, active individuals ought to exert upon the patient by means of wet and dry rubbing alternately, so as to promote the superficial circulation as much as possible, and thereby relieve the internal congestion.

*Cholera infans* is generally easily cured by cool injections, the abdominal compress, and the tepid towel-bath or sponges, as often as the surface manifests any considerable feverish heat. The patient may drink of pure water according to thirst. When the vomitings from the bowels are mixed with blood, the injections should be quite cold. In protracted cases, the child should be placed, once a day, when the fever is highest, in a tepid half-bath, and the abdomen, back, chest, and even extremities well rubbed with the bare hand. The food must be exceedingly simple. Warm meal mush and rice, seasoned with a little sugar or milk, are the best articles.

**Dysentery.**—The group of diseases properly arranged under this head are characterised by frequent and copious discharges by stool, with a sense of weight and tension in the lower belly, and without severe griping or tenesmus: mucus and vomiting are uncommon but not usual incidents. All forms of dysentery may become extensive, in which event there is great prostration.

In the *freakest variety*—*diarrhoea fluxus*—the stools are of offensive quality, but deeply loose and copious.

The *bilious variety*—*diarrhoea biliosa*—is only distinguished from the former by the bright yellow color of the discharges.

In the *serous form*—*diarrhoea serosa*—the dejections consist mostly of, or contain a large quantity of, mucus. This affection has sometimes been called *substernal diarrhea*.

The *white form*—*diarrhoea alba*—is characterized by dejections of a milky color, resembling a mixture of water and lime, with a frothy scum. This has been called *chylous diarrhea* by some authors, on the mistaken supposition that the non-absorption of chyle was its immediate cause. It is chiefly found in persons whose digestive powers have been shattered by serious fevers and severe drugs, and by excessive indulgence in stimulating food or drink, or narcotic stimuli, or alcohol and tobacco.

In the *fourth variety*—called *listery*—the dejections consist principally of undigested aliment, which passes rapidly through the alimentary canal, with but little change.

In the *spontaneous variety*—*diarrhoea spontanea*—the discharges are almost entirely liquid and watery.

*Tubular diarrhea* is known by discharges consisting more or less of membrane-like tubes, or fragments of membranous tubes, which are whitish, mucous, and indurated. This membranous secretion is of the same nature as that which takes place in the mucous surface of the trachea in cases of croup. Its expulsion from the bowels often alarms the patient, who mistakes it for a portion of the bowel itself. In some instances, membranous tubes half a yard in length have been examined.

**Treatment.**—In a general sense, the treatment of diarrhea, when protracted or chronic, is essentially the same as for dyspepsia, of which it is usually symptomatic. The *freakest form*, being occasioned by excess in quantity, or an irritating quality of food, requires no medication save the negative remedy—*feeding*. *Bilious looseness* is readily relieved for the time by one or two copious tepid injections. All the other forms may be treated on general principles: the local irritation may be relieved by sinapisms, cold injections, cold compresses, hot fomentations, &c., as either may be indicated, while the cure must be found in a restoration of the general health, for which purpose all the means recommended for the treatment of dyspepsia must be had recourse to. In all forms of chronic diarrhea the diet must be carefully attended to; it must well be too bland and simple, and the whole regimen is, in all respects, the same as for dyspepsia.

**INTERSTITIAL CONCRETIONS.**—There are three kinds of stony concretions found in the stomach or intestinal canal, all of which are the result of indigestion connected with constipation. One kind, called *bezoar* or *bezoardum*, is frequently found in the stomachs of ruminating animals, especially the goat, but very rarely in the human stomach. It consists of a central nucleus of gravel, straw, glass, seeds of plants, etc., around which a vegetable matter or animal secretion is closely agglutinated, having a glossy white or a bright metallic luster. These concretions were formerly regarded as foodbolts by physicians, and even as amulets by the superstitious.

Another kind—*intestinal calculi*—were frequently found in the human stomach, is composed of the same earthy and stony matters as are found in the bladder in calculous affections of that organ, and are of various sizes, from a pea to a hen's egg. The long-continued use of chalk, magnesia, etc., so generally prescribed for acidity of the stomach, is a frequent cause of these concretions; hence dyspeptics are peculiarly liable to them. Preparations of iron, particularly the carbonate, when administered medicinally, have been known to accumulate in the bowels and form concretions.

The third kind—*cyrtolite*—consisting of indurated mucus or sly matter mixed with hardened feces, results from constipation by which the accretionous matter remains too long in the coils of the colon, or some other part of the alimentary tract. The discharges are usually in the form of hard roundish balls, from the size of a pea to that of a walnut. The substance called *ambergris*, found in the larger intestines of the walrus, or sperm-whale, is supposed to consist of the hardened feces of the whale, and to be the result of constipation; hence the more early the animal when harpooned, the more productive and valuable is its yield of ambergris.

It is generally difficult to recognize these affections by the symptoms, save when their character is revealed by the appearance of the concreted matters in the ejection or discharges. Usually, however, there is more or less pain or tenderness at a particular point in the abdomen, and occasionally a hard, lumpy tumor, which either produces an external tumescence or swelling, or may be distinctly felt on pressure by the finger.

**Treatment.**—All we have to do in the way of resolution is to get rid of the morbid accumulations by copious warm injections, and put the patient on plain, nonconstipating, healthful food and feruginous diet.

**Worms.**—Pathologists are not all yet agreed whether intervention—worms, or the larvæ of insects inhabiting the stomach or intestines—

disorders intestinal or stomacheal. It is not very long since a kind of verminomania prevailed in the medical profession, by which a multitude of diseases were ascribed to vermination. Dysentery, plague, malarie, scrub-pox, hydrophobia, &c. syphilis, piles, cholera, and even hiccoughs, have been ascribed to various kinds of animals, worms, or insects.

There is no wonder if it still that worms are suspected, by physicians and nurses, to occasion various ailments of children much sorer than they really exist; but it is equally true that they do occasionally effect a judgment, and become detached in the alimentary canal, producing a variety of symptoms indicative of gastric and intestinal irritation. Their origin is not so clear. In some instances it is quite obvious that the young or even of some species of worms is taken into the stomach with the ingesta; generally when drinking of stagnant or marshy waters, or when eating decayed or infected fruits and vegetables, or partially decomposed and putrescent animal food. It is also highly probable, at least, that the minute eggs, or seeds, of various microscopic beings, in the atmosphere, and collecting, especially in damp places, on the alimentary materials, get an entrance into the digestive cavity, and, providing they find in food secretions, retained excrementitious matters, or impurities of any kind, a proper nest, quicken into life, grow, and become finally so strong and vigorous as to resist the ordinary solvent property of the vital fluids, and the expulsive efforts of the stomach *vis medicatrix naturæ*. This idea makes the existence of worms depend on a morbid condition, which I believe to be the fact; for I have never yet known any kind of worms to trouble children who have been fed and reared healthfully. Dr. H. Cooper and many other medical writers of credit assert that worms are most prevalent among the poor, dirty, ill-fed classes of society, and particularly in persons who reside in damp, marshy countries.

Active worms are those which pain and find a proper niche in the stomach or above usual; they are mostly found in children and sickly adults, producing emaciation, a speckled, hard belly, gnawing or pinching pain in the stomach, pale countenance, hoarse breath, and irritation of the nostrils. These worms have been arranged into five varieties, viz., the long round-worm, long flat-worm, long tapeworm, broad tapeworm, and pinworm. The first and second varieties are much more common than the others. The latter is rarely found in man, though the most common to domestic animals.

Dead worms exist in or near the rectum or lower bowel. They excite a troublesome itching or irritation of the part, often preventing sleep, and sometimes occasioning pain so distressing in the stomach



The varieties found in this locality are the ascarides, called also thread-worm, and more-known, the knife-grubs, and the Asis. The first variety is most common, and is somewhat migratory, being occasionally found in the stomach and bladder. The last two kinds are very rare in the human animal.

The erratic worms, which are occasionally though not frequently found in the alimentary canal, are the hair-worm, the erratic leech, and the tapeworm. These are called erratic, because they do not find a proper habitation in the stomach or intestines; they produce sporadic colic, with severe gripings; and sometimes wasting, or depletion of blood. The first and second varieties are chiefly found where the stagnant, muddy, and putrid waters of swamps, pools, and ditches is drunk. They sometimes, when accidentally introduced into the human stomach, attain an enormous size, and deviate so much from their ordinary shape as to be with difficulty recognized. Dr. Good says (*Study of Medicine*): "It is highly probable, however, that they can only live in dyspeptic persons, or persons whose digestive powers are injured; for there are few or no animals capable of resisting the solvent power of the gastric juice when secreted in full health and vigor." The third variety find their way into the stomach in the condition of eggs or leppers, which are deposited in various articles of food, particularly in all strong and staid meats, cheese, bread, &c.

Diagnosis.—Dr. Hecquer has most clearly presented the general train of symptoms which determines the existence of worms: "Head-ache, vertigo, dizziness, disturbed dreams, sleep broken off by light, sweating fits, vomiting, flatulencies, thirst, pallid lips, bad taste in the mouth, offensive breath, rough difficult breathing, itching of the stomach, pain in the stomach, nausea, epistaxis, vertigo, lassitude, heaviness, fullness at the nose toward night, at length delirium of blood and mania." The broad tape-worms produce the severest attacks on the body; the tenues and ascarides (round and thread-worms) sometimes but scarcely suspected, unless there is itching of the anus, or they are traced in the feces." All of these symptoms, however, may arise from any continued irritation in the first passages; hence, in forming our diagnosis, we must take the greater number of the above symptoms in connection with the history of any other recognizable ailment to which they can reasonably be ascribed. "In all chronic diseases," says Sydenham, "attended with symptoms that are chiefly sanguinous, the suspicion of the dysentery should be directed to intestinal worms."

Treatment.—It is obvious that the rational cure of worms must depend upon removing the morbid condition which renders the aliment-

dry and their habitable abode; this requires a restoration of vigorous functional action, and pure nourishment; and to effect this we must again resort to all the medicines suited to dyspepsia. Some extra management, however, is necessary to disengage the bowels from their stony beds, and expose their hold upon the mucous membrane. This can be best accomplished by copious injections of cold water occasionally, and rigidly simple and unconcentrated food. A perfect "vegetarian" diet may be found in two articles—the crusts of good, even wholemeal bread, and good, ripe, uncooked apples. It is important that most of the food be hard, so that it be well masticated, and that it be eaten slowly, so that the stomach be not overburdened. Dry toasted brown bread is also admissible; and cracked wheat may be used successfully by way of variety. All starchy food is especially objectionable. Those mothers who have jeopardized their little ones as free range cattle find it has produced worms, may find it somewhat difficult to restrict them to the coarse food which will cure them. Still they can do it, and should.

**Hæmorrhoids.**—Dr. Good limits the definition of the varieties of the disease comprehended under this generic term to "tired and painful tubercles or excrescences on the verge of the anus, usually with a discharge of mucus or blood." This definition excludes those swellings of the veins near the anus and within the rectum, which are termed *hemorrhoidal veins*, and which almost all persons who are habitually constipated are more or less troubled with, relieved by pills and difficulty in passing the faeces, which are slightly streaked with blood. Dr. S. Cooper, and, indeed, nearly all medical authors, regard the various forms as originally mere swellings of the veins.

**Description.**—In their simplest state pills consist of numerous tumors of the anal veins, covered with a slight thickening of the mucous membrane of the rectum. They are first noticed in the form of small fleshy tubercles, generally of a brownish or purplish color and rather situated within the anus, or descending from the rectum. They have rather a solid and spongy feel, and when quite external are pale, and more elastic and transparent; they frequently appear and disappear very rapidly. Pills often contain a coated cavity, filled with fluid or coagulated blood; and by repeated attacks of inflammation the swellings gradually enlarge into caruncular excrescences about the verge of the anus, either within or without, of various shapes and sizes, from pin-sized to fig-sized, and are frequently so painful as to prevent either sitting or walking. When these caruncles are hard, fixed, incompressible, without discharge, and indelibly sore to the touch, the

affection is called *blind piles*. When the irritation accompanying them induces a discharge of whitish mucus from the neighboring glands, it is called *white piles*. When the hemorrhoidal vessels, which form or support the growing tumors, are so distended as to burst and bleed freely, it is denominated *bleeding piles*. And when warty excrescences spread about the perianne, or within the verge of the anus, it is called *caruncular piles*. Usually pile tumors become larger and firmer with every reappearance; and when they have been strangled for some time by the pressure of the sphincter, repeatedly gorged with fluids, or of very long standing, they become fixed and permanent in size, and acquire a greater degree of solidity; they are then a source of almost constant pain and trouble from protrusion, inflammation, or ulceration, and often occasion a most distressing profluvium of the lowest blood.

*Special Causes*.—Among the causes assigned in medical books, we find "local irritation produced by irritated and retained feces; purgative stimulants, especially *stercoraceous purgatives*." This may all be resolved into constipation, and the medicine given to cure constipation. Probably more than half the adult population of the United States are sufferers, to a greater or less extent, from piles in some form. For eight or ten years past, during which time my attention has been especially called to this subject, I have found a great majority of invalids who have applied for water-treatment, whatever might have been the character of their leading ailment, to be also afflicted with this. Its special and almost exclusive cause is concentrated food, inducing constipated bowels; but it is almost always greatly aggravated by the purgatives which have been given, by regular and irregular quacks, on account of the constipation. Most of the patent pills, from which newspapers derive so large a revenue, and the people so easily sheltered constipation, are strongly stercoraceous, and hence peculiarly calculated to inflame and relax the vessels of the rectum, already irritated and engorged by their hardened contents. Many frightful cases of external protrusion, or falling down of the anus, have come under my observation in the person of habitual pill-takers. In some cases the bowel has prolapsed three and four inches.

Dr. Good names "*peculiarity of constitution*" as one of the causes of pile tumors; and Dr. Copland (*author of a Medical Dictionary*) "conceives that piles are most common in persons who possess a very strong action of the sphincter ani, and are hence habitually predisposed to a spasmodic stricture of the rectum." These remarks, from these eminent authors, I consider eminently nonsensical. Nothing but the false philosophy of a false system could ever induce such verdicts.

and spinal scabies to perpetrate such aberrities. According to my experience, none out of every ten of relaxed, debilitated females, who most of necessity possess a very weak instead of very strong action of the sphincter, as well as of all the other muscles, are affected with piles.

**Treatment.**—Piles may be promptly relieved by local applications; but the cure depends on restoring the integrity of the digestive functions. The general management is essentially the same as for dyspepsia. When the tumors are inflamed and painful, very frequent sinapisms, of a low temperature, 50° to 55°, with six repeated injections of a small quantity of cold water, should be employed, until relief is obtained; after which about four to six ounces of very cold water should be thrown into the rectum every evening previous to the expected action of the bowels. When the tumor is prolapsed, the patient should keep the horizontal position mostly, and apply the coldest wet cloths to the fundamen- tum. Sometimes an excessively irritable or highly inflammatory condition of hemorrhoidal tumors, occasions a severe and protracted diarrhea, the discharges occurring as often as once an hour, or every half hour, consisting mostly of small quantities of bloody mucus, or clay rather tinged with blood, and accompanied with considerable spasms, griping, or bearing down sensation. Such attacks usually last a week, and not infrequently two or three weeks; the patient generally, and the doctor sometimes, mistake the case for dysentery. Here injections do but little service; the wet-sheet pack, two or three times a day, and the wet abdominal bandage very frequently changed, are our most advantageous resources.

The dietary part of the management is of first importance. In some few cases the mucous surface of the lower bowel is so tender and irritable, that almost all food seems to act as a mechanical irritant; the patient, however, at such times needs but very little of any kind, and this may be boiled rice, farina, Graham flour, starch, tapioca, &c. But generally the irritated and unconcentrated ferments of fermentive food are preferable, as in all other forms of indigestion.

Hard warty excrescences around the anus, or scattered over the perineum, may be removed with entire safety and facility by the ligature, or knife, or clipped off with a pair of scissors. Removal by coaction and by ligature has often been practiced in the other kinds of hemorrhoidal tumors, but there is always danger to be apprehended from hemorrhage in the one case, and from sympathetic inflammation in the other; moreover, if all the resources of hydropathy and hygiene are judiciously drawn upon, there is not the least necessity for these surgical operations.



## CHAPTER V.

## FLUXES.

I adopt this generic term, not because it is clearly appropriate or descriptive, but because it is familiar. The only species strictly pertaining to this genus are catarrh and dysentery, both essentially febrile diseases, and each consisting of a peculiar inflammation of some portion of the general mucous membrane; each exhibits two varieties, thus:

Catarrh	{	Common,	Dysentery	{	Acute,
		Epithelial.			Chronic.

**CATARRH.**—This is an inflammatory affection of the mucous membrane of the fauces, often extending to the frontal sinuses or bronchia, on both; it is attended with swelling, obstruction of the nostril, and more or less mucous expectoration, or discharge from the nose.

**Symptoms.**—In common catarrh—cold in the head or chest—the fever is slight; there is a sense of weight over the eyes, and fulness in the head, and the nostrils pour forth a thick, serous mucus, which excoriates the skin; the voice is hoarse, and more or less cough attends. In the epidemic form—influenza—the attack is sudden, and the fever severe and strikingly depression; there is great heatness over the eyes, extreme languor, prostration, and oppression at the præcordia, with frequent sighing, sickness, and violent headaches. The pulse is very frequent, and peculiarly irregular; the skin is moist, with a tendency to profuse sweating, but the heat of the body is seldom considerable; the tongue is white or yellowish, but moist, sometimes there are some general or local moribund points, and at other times erysipelatous patches appear in different parts of the body. The danger of this disease is not in proportion to the violence of the symptoms, as compared with all other febrile diseases, for usually the symptoms are extremely violent for one or two days, and then are rapidly subdued; great debility, however, frequently remains for weeks or months after convalescence is established. Often severe pains attack the chest, and in such cases physicians, regarding them as indicative of pleurisy, have endangered the patient's life by emascination.

**Special Causes.**—Common catarrh is usually traceable to taking cold. Influenza, the Asiatic cholera, is usually epidemic, and has prevailed at all seasons of the year, in every state of the barometer, thermometer, and hygrometer. Dr. Good very cautiously imputes its

specific cause to some "atmospheric interposition." Dr. Weber has suspected "negative electricity" of the attack; but none of the modern theories are any improvement on that of Hippocrates, which was "periodical interposition;" nor the very modest suggestion of Sydenham, who was rather disposed to ascribe it to "some acids and insupportable changes wrought in the bowels of the earth itself, by which the atmosphere becomes contaminated with certain effluvia, which predisposes the bodies of men to some form or other of disease." Influenza is the most widely-spreading epidemic known, having sometimes extended over all Europe and a part of America in the same winter.

**Treatment.**—This is exceedingly simple. Practically, common catarrh may be regarded as a *high fever*, and influenza as a *low fever*. In the former affection, the wet-sheet pack is specially indicated as the leading measure, repeated according to the general feverishness; and in the latter, the tepid spongio, frequently repeated, and followed by the dry-blanket envelope when the body feels chilly after the bath, with the chest-wrapper well covered when the lungs are tremendously affected, and warm hip and foot-baths when the abdominal viscera are disproportionately disturbed. Generally the bowels require to be moved by free tepid injections at the outset; and when there is considerable nausea and retching, the warm water-enema should be administered. The general exposure is the same as for simple fever.

**Dysentery.**—This disease was called bloody flux by the old authors. It is an inflammatory affection of the mucous coat of the larger intestines, accompanied with griping and tenesmus; the dejections are frequent and bloody, and the faeces are discharged irregularly.

**Symptoms.**—In the acute variety, the abdomen is painful or tender; the faeces are discharged with difficulty; mucous and bloody dejections alternate, or are variously diversified in color and consistence; the attending febrile disturbance is considerable, and may be of the high or low character—the synocha or typhoid type.

What is called chronic dysentery is sometimes a milder and more disguised form of the disease, but more generally it is constant dysentery modified by local circumstances, or a sequel of untreated acute dysentery. In plainer English, it is frequently a drug-disease. This remark need not excite surprise when the formidable array of drug-poisons which modern medical science has brought to bear upon this disease, and upon the patients' constitutions, too—calomel, corrosive sublimate, nigra of lead, antimony, nitrate of silver, opium, opiumum, oil of turpentine, mineral acids, etc.—is taken into account. Chronic dysentery

is attended with but slight fever, and that usually of the hectic type. Either variety may be attended with retention of the bowels, and purulent, sanguine, or membranaceous evacuations, or discharges of pure, unmixed blood.

*Special Causes*.—Etiologic causes of all kinds are the principal predisposing, and undue exposure to cold, damp, sudden alternations of temperature, etc., the chief exciting causes. Bad water and marsh effluvia sometimes occasion the worst forms of the disease.

*Treatment*.—Medical books are as discordant in relation to the treatment of dysentery, as they are in the case of cholera. In treating the disease hydropathically we must ever keep in view the character or type of the fever, which is in reality so much a part of the disease as is the local inflammation of the colon, or other large intestine. When the general fever is violent, the wet-sheet pack or half-bath should be employed, according to the degree of heat. Moderate draughts of cold water should be frequently administered, and the whole abdomen constantly covered with the wet compress, which should be very often changed, until the pulse, heat, tension, etc., subside. In the early stage one or two copious tepid injections are advisable, to cheat the inflammatory mind of its irritating crudities, after which moderate cool injections are to be employed occasionally. Sometimes very cold or iced water has a more soothing effect upon the griping and tension than any other temperature, and reference should always be had to the patient's feelings in regulating the temperature of the water.

Hip-baths, the temperature low in the ratio that the general fever or heat of the abdomen is high, may be advantageously employed once or two or three times. I have seldom found any difficulty in curing this complaint in children, in a very few days, by two or three daily tepid washings of the whole surface, the constant application of the wet compress to the abdomen whenever and as long as the heat was above the natural standard, the free use of cool or cold water as a drink, and one or two tepid injections at the outset. The diet should be entirely abstemious until the violence of the fever and local inflammation are both sensibly abated, and then as bland as possible—boiled rice, rice gruel, wheat-meat mush or gruel, toasted brown bread, etc. When ulceration takes place in the intestines, and the discharges exhibit pus, purul sanguis, or black, greenish, fetid blood and clots, the diet may be with propriety restricted, for a week or two, to rice or arrowroot.

I have never known relapses, or "sequela," which are so common and so formidable after an attack of this disease and a course of drug-treatment, occur in a patient who was treated hydropathically from first to last.

## CHAPTER VI.

## CACHEXIÆ.

**LATERALS.** the term *cachexia* means bad habit of body, a condition which exists more or less in all diseases. But there is a class of diseases prominently distinguished as being caused by or attended with universal depravity of the organization, or general derangement of all the bodily functions, constituting, in fact, a constitutional mist or mal-conformation, which may be transmitted through many generations, with either increasing or decreasing intensity, as the voluntary habits of each successive generation are more or less in conformity with physiological laws; and this group of diseases may be appropriately considered in the present chapter, as expressed in a tabular arrangement:

Consumption	<ul style="list-style-type: none"> <li>Tubercular,</li> <li>Catarrhal,</li> <li>Apyretic,</li> <li>Laryngeal,</li> <li>Hæmorrhagic,</li> <li>Dyspeptic.</li> </ul>	Hæmorrhage	<ul style="list-style-type: none"> <li>Epistaxis,</li> <li>Hæmoptysis,</li> <li>Hæmatemesis,</li> <li>Hæmaturia,</li> <li>Uremia,</li> <li>Amel.</li> </ul>
Marasmus	<ul style="list-style-type: none"> <li>Atrophy,</li> <li>Anæmia,</li> <li>Climacteric,</li> <li>Tales.</li> </ul>	Scurvy	<ul style="list-style-type: none"> <li>Simple Scurvy,</li> <li>Local Scurvy,</li> <li>Sea Scurvy.</li> </ul>
Dyspepsia	<ul style="list-style-type: none"> <li>Aciditas</li> <li>Albus,</li> <li>Artaritis.</li> </ul>	Phlebotomy	<ul style="list-style-type: none"> <li>Sanguis,</li> <li>Serum.</li> </ul>
		Scurvy,	<ul style="list-style-type: none"> <li>Malum,</li> <li>Cancer,</li> </ul>

Most of the above diseases, and several which I have thought proper to consider under other heads, are included in the order *Cachexia*, in Dr. Grew's nomenclature, a term which signifies "an ill-conditioned habit."

**CONSUMPTION.—PULMONARY CONSUMPTION.—PHTHISIS PULMONARIA.**—Consumption of the lungs is the most general evidence and the most fatal result of the atrophic and wasting habits of civilized society. In the city of New York, about 2000 die annually of this disease, and in Boston, Philadelphia, Baltimore, and a majority of the



other cities of the United States, the mortality from this source bears nearly the same relation to the population. In most other countries in which civilization has made equal progress, the disease has committed equal ravages. Dr. Young has calculated that it destroys, presumably, one fourth of the inhabitants of Europe. Females, from their more sedentary, indoor, and relaxing habits, are rather more liable to this malady than males. The period of life between puberty and middle age—between ten to forty—is more especially favorable to the operation of the causes of this disease, and the greatest ratio of mortality occurs between the ages of thirty and forty. The greatest number of deaths, in this latitude, takes place in the coldest months of the year. This fact, however, does not prove that the cold season is more conducive to the development or causation of consumption, but that consumptives are more liable to sink at that particular period.

*Symptoms.*—Tubercular consumption is by far the most frequent and most intractable form; and indeed, some authors regard the existence of tubercles in the lungs as essential to the character of true phthisis. It is usually connected with a strongly-marked scrophulous diathesis, is more insidious in its approach, and more delusive in its progress than either of the other varieties. Many persons are born with such a malformation of the chest, and so great a pre-disposition to tubercles, that the slightest alteration in the manner of life suffices to induce that condition of super-saturation, mal-nutrition, and morbid deposit, which eventuates in general tuberculation of the pulmonary streamers. The special symptoms are, short and tickling cough; the pain in the chest is slight; there is either a sense of tenderness or weight experienced at the upper part of the lungs; the breathing is habitually short, and a full inspiration is impracticable, the attempt increasing the sense of weight, soreness, or aggravating the cough; the expectoration is generally scanty and viscid in quantity in the early stages, and in many cases it is very trifling throughout; the mucus expectorated is a watery, whey-like matter, sometimes tinged with blood, and as the disease progresses, thick, mucous, rusty, or cheesy particles are excreted. Sometimes small, irregular stony concretions are formed by the deposition of earthy matters—mainly carbonates of lime—in the substance of the tubercles, and extricated on the process of absorption releases them from their inclosures. Emaciation does not become strikingly apparent until the disease has made severe inroads upon the constitution, and not infrequently the body maintains its ordinary fullness until the greater portion of the lungs is fatally occupied by tubercular formations. In those cases attended with but trifling expectoration, there is, of course, but little action; yet generally some per-

tions of the tubercles are ulcerating, and forming open, irregular cavities in the substance of the lungs, while in other parts of the pulmonary structures, the process of tuberculation is going on. As the functional powers of the lungs become impaired, the pulse becomes frequent and feeble, the breathing grows shorter, irregular chills come on, succeeded by some degree of feverish heat; and in the last stages, night sweats, diarrhoea, swellings of the limbs, &c., denote the rapidly approaching fatal termination. In this form of consumption, the hope of recovery often attends the patient almost to the dying hour, and schemes of business or pleasure, or new projects for recovery, occupy his thoughts until within a few days or hours of death.

There has been much controversy among medical theorists whether tubercles are the product of inflammatory action, or of irritative action, or of an action to which some other technical term should be applied. The discussion is entirely unprofitable. It is enough to know that the general condition of the body is one of debility; that the local condition of the part diseased is one of congestion, and its secretions changed from a healthy to a morbid character. It is also a disputed point whether tubercles in the lungs are curable in any case, some eminent writers taking the position of their absolute and unconditional fatality, while others, equally respectable as practitioners and pathologists, contend that cures have ensued in a few instances.

Dr. Good, in alluding to a remark of Dr. Woodhouse, that 55,000 victims annually die of consumption in Great Britain, makes the following very singular observation: "During the last half-century, it is said to have been considerably on the increase; but this is perhaps chiefly owing to the greater number of infants of delicate health who are saved from an early grave by the introduction of a better system of nursing than was formerly practiced, yet who only escape from a disease of infant life to full blown one of adolescence or adult years. And, for the same reason, women rarely suffer from consumption, as they only rear a healthy race, and lose the sickly ones after birth." I think a better explanation can be found in another way. Much of the increasing mortality is justly attributable, in my opinion, to the introduction of a worse system of nursing infants than formerly prevailed, in wit: close rooms, hot stoves, tight clothing, rich-curd food, opium and drugs, &c., by which the bodies of the infants become sickly, marred, feeble, and susceptible before they emerge from their cradles. The reason that the nurses seldom have consumption is because they are comparatively exempt from the peculiar debilitating customs of our better system." The statement that they lose all their sickly children is wholly untrue.

In the catarrhal form the cough is frequent and violent, with a copious expectoration of a thin mucopurulent matter, rather mixed with blood, but generally offensive to the smell. There is considerable soreness of the chest, and transient pains shifting from side to side. It comes on after repeated colds, or a protracted catarrhal affection.

The symptomatic variety is known by a dry cough, which returns fitfully; fixed, circumscribed, aching pain in the chest, which is sometimes throbbing or pulsatory; the patient experiences great difficulty in lying on one side. The cough at length terminates in a sudden and copious expectoration of purulent matter, which sometimes throws the patient into convulsions. These symptoms are immediately owing to the formation of an abscess or abscesses in the lungs. When the collection of matter is considerable, the patient often experiences severe rigors or chills, and manifests a high degree of irritative fever. After the discharge of the matter, the patient is sometimes permanently relieved; but usually the relief is temporary, and all the symptoms recur repeatedly at longer or shorter intervals, as new abscesses form and discharge their contents. In some few instances no expectoration takes place, the patient dying before the abscess breaks.

*Laryngeal phthisis* is that modification of the disease in which ulceration commences in the larynx before any extensive morbid alterations have occurred in the lungs. It is distinguished by excessive irritation and tickling in the larynx, with a cough dry and husky at first, but soon attended with a slight discharge of purulent mucus, frequently streaked with blood; there is also remarkable hoarseness, which occasionally goes and returns without any assignable cause, and a sense of soreness or tenderness about the upper part of the throat; often there is some degree of actual hemorrhage from the diseased part.

All these symptoms may occur in the last stage, or near the final termination of either of the other forms of consumption, more especially the tubercular; and also in the worst cases of bronchitis; they can, therefore, only be properly regarded as a distinct variety of phthisis when they take the lead in the morbid manifestations. When the ulceration of the larynx, instead of preceding disorganization in the lungs, comes on after alteration in the lungs has long existed, the patient complains more particularly of a sore, oppressive sensation in the throat, as if some foreign mass were lodged in the larynx; and this sensation is generally accompanied by more or less difficulty of swallowing; it is, too, usually accompanied with a peculiar hoarseness, or, rather, roughness in the voice. In most cases it is a final onset, occurring only a few days, or at most a few weeks, before death.

The hemorrhagic variety is characterised by repeated attacks of

hemoptysis, or bleeding at the lungs. The coughing or expectoration of a large quantity of blood, may indeed be, and usually is, an accidental occurrence in all the other forms of the disease, especially the tubercular and the dyspeptic varieties; nevertheless, it sometimes takes place without evidence of any considerable organic change either in the lungs or digestive organs, and occurs with such frequency and violence as to exhaust the patient, producing all the train of constitutional symptoms which marks the progress of the other varieties of consumption. It is intimately connected with the next variety—*dyspeptic phthisis*—and usually depends immediately on an extremely engorged condition and relaxation of the pulmonary vessels, this condition being chiefly owing to a shrunken, bloodless state of the superficial capillaries, or to an enlarged liver, or, which is more common still, to both of these circumstances combined.

*Dyspeptic phthisis* is that form of pulmonary consumption which is preceded by protracted disease of the digestive organs; the lungs are affected sympathetically, or, rather, the morbid coalition is extended from the abdominal viscera to the lungs; the liver being usually the organ most concerned in the primary malady. This variety of consumption is more common than is generally supposed, constituting, in fact, a majority of the cases we meet with. It is seldom correctly diagnosed, from the fact that, when the lungs become prominently the seat of the morbid phenomena, the prior evidences of digestive derangement, or disease of the liver, are overlooked; very often the latter are so obscure as to be wholly disregarded, unless the physician discovers their relation to the affected lungs by a careful investigation of the history of the patient, from the first appearance of ill-health. Dr. Wilson Phillips says that *drunkards*, whose digestive powers have been broken down by violent spirits, frequently fall a sacrifice to this disease; and he regards those who have suffered severe attacks of dyspepsia, and what are called bilious complaints, as peculiarly liable to dyspeptic consumption.

*Diagnosis.*—As it is only in the incipient stage of all forms of consumption that we can take any reasonable assurance of effecting a radical cure, it becomes exceedingly important to detect the malady before it has made irremediable advances. It is impossible to give a list of symptoms which may be relied upon as pathognomonic. Whenever the patient experiences habitual cough, be it ever so slight, and habitual expectoration, of whitener character, with shortness of breath, a sense of pain, fulness, weight, or constriction in the chest, with an increasing feeling of general languor or debility, the case is probably consumption, and should therefore receive the closest scrutiny. If



these symptoms have been preceded by dyspeptic indications, or evidences of disordered or torpid liver, the danger is greater: and if the constitution is manifestly scrofulous, still greater apprehension may be entertained. In the early stage of the dyspeptic variety, the cough and expectoration occur chiefly in the morning, and are hardly noticed during the remainder of the day; the expectoration consists of a small quantity of tenacious mucus or mucopurulent matter, generally discolored in the morning by a carbonaceous, dark-colored stain, as though charcoal dust had been diffused through it.

The early symptoms in all forms of consumption are obscure and insidious; and those which attend its progress and mark its several stages are subject to very great diversity. But the general progress of the symptoms may be enumerated as follows: The patient first becomes sensible of unusual languor, and breathes with less than usual freedom; his respirations are shorter in duration and more frequent in number. He coughs occasionally, but does not complain of its being troublesome, and he very rarely expectorates when coughing. Some degree of pain, soreness, weight, or tenderness, will be at this time experienced in some part of the chest whenever the patient makes a deep and prolonged inspiration. As these symptoms increase, the pulse becomes more frequent and weaker, particularly in the after part of the day. After the disease has made a little farther progress, there is feverish feeling or hectic flush toward evening, a tendency to uneasy perspiration during the night, and either the sleep is disturbed by fits of coughing during the night, or a considerable paroxysm of coughing takes place early in the morning, leaving the patient with a greater feeling of feebleness and relaxation. This assemblage of symptoms may be considered as constituting the first stage.

In what may be regarded as the second stage, in which the disease is evidently established and generally hopeless, the cough increases in frequency, and from being dry, is accompanied with a purulent mucus, varying from a watery whey-like matter occasionally tinged with blood, to an expectoration of greenish pus, which may be variously colored—liver, deep black, light brown, light green, bright or dark yellow, hard and lumpy, or soft and shreds, fetid or sweet, foetid or odorless. In many cases of the tubercular form it is very scanty, while in a majority of the catarrhal it is extremely copious. The weakness in the chest is now felt more constantly, and the sense of weight has become permanent; hectic fever is fully developed, and the breathing is often accompanied by a sound somewhat like the ticking of a watch. The strength fails rapidly, the body emaciates, the pulse beats more frequently and feebly, generally ranging from 100 to 120; yet in some

instances of the dyspeptic variety I have known the pulse to preserve the slow, lagged, remiss characteristic of that form of digestive derangement in which torpor of the liver is a prominent condition, until the last. The teeth usually increase in transparency, and the eye manifests an unusual brilliancy, the sclerotic coat becoming of a pearly white. The fingers are shrunk, except at the joints, which become prominent; the nails are bent for want of support; the nose is sharp; the eyes sunken; the countenance wears a peculiar but morbid smile; the whole body is shriveled; the spine projects, instead of sinking, from the decay of the muscles; and the shoulder-blades stand out like the wings of birds.

The third stage is attended with diarrhea, aphonia or labored throat, difficulty of swallowing, dropsical swellings in different parts of the body, and various other symptoms indicative of the final exhaustion of the powers of life.

Although extreme emaciation usually occurs before death, yet in a few cases, particularly in the apoplectic variety—which is the form most frequently designated as the quick or polluting consumption—the progress of the local inflammation is so rapid, that the extensive disorganization of the pulmonary structure produces a fatal result before the body is greatly attenuated. In a few instances recoveries have happened after extensive rotaria, or abscesses, have been formed in the substance of the lungs; and a very few examples are recorded in which the patient has survived the entire destruction of one lung.

*Pathological Appearance.*—Dissections, which do not prove the nature but the effects of disease, show, in almost all cases, an enlarged and elevated condition of the lungs. Tubercles are formed indiscriminately in all parts of the cellular texture of the lungs, but more frequently and abundantly at its upper and posterior parts. They exhibit every diversity of size; are generally whitish and opaque, like small absorbent glands, but sometimes semi-transparent, like cartilage, with black dots in their substance. They often augment by degrees till they attain half an inch in diameter; but usually, when about as large as peas, they begin to soften in the center, and finally open by one or more small openings into the neighboring bronchia, or remain for a longer time closed, and constitute small abscesses, filled with a curdy, half-furrowed pus. In some cases large abscesses are formed, without any trace of tubercles; in a few cases the lungs appear hardened, impurified, or shriveled into a leathery appearance; and occasionally the whole cellular substance is occupied by tubercles, with little appearance of exarations or open ulcers.

*Physiological Signs.*—Much attention has, of late years, been be-

showed upon percussion and auscultation as means for ascertaining the exact morbid conditions or structural derangements of the thoracic vessels and the stethoscope, invented by Laennec, has come into very general use, as a convenient acoustic instrument for the purpose of determining, with greater precision, the abnormal changes which take place in the lungs. There is no doubt that, by much experience, the practitioner can, in many cases, decide with much greater accuracy as to the exact point of the lungs most diseased, and, possibly, as to the extent to which the disease has involved the lungs in disorganization, with the aid afforded by a careful stethoscopic examination; yet, on the whole, I regard the instrument as of very little practical value. So far as the prospect of cure and the proper course of medication are concerned, the intelligent physician can derive no advantage from the stethoscope; and even experienced practitioners are almost as liable to diagnose incorrectly with as without its assistance. I can name at least one person in the city of New York whose lungs were pronounced essentially tuberculated by an experienced professor of stethoscopy, who is now in the enjoyment of excellent health.

*Special Considerations.*—Consumption has been regarded as contagious by some. There is no question that all diseases have a tendency to propagate their kind—like causes like—yet this disease is not more chargeable with “personal communicability” than a majority of others. It may, indeed—and I have known such instances—be caught by a vigorous, healthy person, who has no hereditary predisposition, by a long and intimate intercourse with, or attendance upon, a patient who has declined under it; as, for example, a husband or wife, devoting himself or herself exclusively to the care of a broken companion through all the stages of the malady, occupying the same room, sleeping in the same bed, and personally performing all the acts of kindness and duty required by the patient's condition, may in time become similarly affected. It has been remarked by most authors that any suddenly suppressed evacuation or accustomed discharge, is peculiarly liable, especially when a predisposition exists, to induce consumption. I think, however, all the danger from this source could be obtained by a proper attention to the general health. A suppression of the menstrual secretion in females is supposed peculiarly to conduce to the formation of a consumptive diathesis; but even generally the suppression follows as a consequence of prior disease of the lungs. Pregnancy often arrests the progress of the disease, even when far advanced; but it recurs in all its force soon after the function of gestation is completed.

*Treatment.*—It is the common consent of the medical world that consumption is incurable, especially in all stages after the first; and



three ten examples of cases recorded in medical works have confidently recovered "spontaneously," or by "the efforts of nature," at all events, without the benefits of drug-medication. Under water-treatment some cures of apparently hopeless cases have been made; the majority, however, who have thus far sought the aid of the new system have deferred it too long, yet, although they have necessarily failed of being radically cured, they have, in nearly all instances, been greatly benefited, while in many cases life has been extended for several years.

Practically, we are to regard the affection of the lungs as a local expression of a general disease; hence the constitutional management is of incomparably more importance than the topical. Every measure which tends to invigorate the general system, and every application which will conduce to a more free expansion of the lungs, and assist in relieving their congested condition by diffusing the coagulated blood over the surface, must be potently employed; while, negatively, all sources of irritation and debility must be sedulously avoided. Instead of building up is disease, and sitting down by a let stove, or lounging in a warm room, the patient must move as lightly as possible without actual discomfort; he must take as much out-door exercise as his strength will permit, and spend as much of his time in the open air—in walking, riding, sailing, etc.—as possible, without exhausting fatigue. Heroback exercise, I think, is not advisable after the disease is fairly formed, the other kinds being altogether preferable. High mountainous regions are certainly preferable to low lands for constitutives, the air being not only more dense but more pure. A residence inland, and a voyage at sea, are both preferable to a residence on the sea-shore, in a case of confirmed consumption, for the reason that there is less uniformity of climate and temperature in the latter locality than in either of the other situations. A removal to warmer and more equable climes—Florida, Cuba, Madeira, etc.—is not necessary to the cure of the malady. In some cases, however, it seems to stay its progress, while in others the change hurries it on rapidly to a fatal termination. Medical authors wholly fail to account for these diverse results. The explanation is probably this: Of those who go to the South, or to some genial latitudes, some are affected with primary disease of the liver and digestive organs, the lungs being secondarily or sympathetically diseased; while in others the lungs were the organs primarily affected with local disease. The former will decline with greatly accelerated speed on going to a much warmer latitude, but the latter will generally experience a temporary alleviation of symptoms.

A great variety of muscular or gymnastic exercises can be employed to advantage in expanding the chest. Striking the axilla or back of



the hands together behind the back; making gentle circular motions with the hands while both arms are extended laterally from the body; striking the hands out laterally alternately, &c., are useful methods. The body must always be kept in the erect posture whether exercising or at rest, sleeping or waking. One of the very best respiratory exercises is that of taking slow, deep, full inspirations, holding the breath as long as convenient when the lungs are fully inflated, and then expiring very slowly; this may be practiced a few minutes at a time, and repeated many times a day. Silver tubes have been constructed to assist the consumptive in expanding the lungs in this way, and in many cases very great benefit has been derived from them; still they are no better than a common goose-quill, nor have either any advantage over the practice of respiring through the nose in the same slow, regular manner. Let it be remembered, that in all kinds of exercises care must be taken not to greatly disturb the breathing or accelerate the pulse. Within this limitation they should be as frequent and active as possible. Dumb-bells afford a good exercise, but they must be handled gently, and not be very heavy. The play of *grecos* is also excellent.

With regard to diet, no disease, not even dyspepsia, requires a more rigidly plain and abstemious course. The general plan of dieting is the same as in cases of *dyspepsia*. But the irritable state of the general system, coupled with the inflammatory condition of the lungs, causes the most trifling disturbance in the digestive organs to result in a much more serious injury to the lungs. I have repeatedly seen all the symptoms severely aggravated, the expectoration entirely changed for the worse in character, the cough greatly intensified, and all the advantage gained by a month's faithful treatment lost by a single injudicious meal. Consumptives labor under one disadvantage which dyspeptics do not in the matter of dieting. The latter feel whatever hurts them in the stomach, and hence in their feelings have a better guide to direct them in the choice of food, or rather in respect to what may be profitably abstained from. The former have the sensibility and irritability more concentrated upon the lungs, and frequently have no other evidence of what agrees or disagrees with the stomach than the better or worse character of the pulmonary symptoms. Experience, therefore, is, with the consumptive, a more blind guide than with the dyspeptic. Judgment must reign supreme here, and appetite and morbid sensibility obey.

For those reasons the diet may be, and, on the whole, should be, more bland, watery, and insatious than is tolerated in the majority of cases of *dyspepsia*. I believe nearly every case will do better by entirely abandoning all animal food, save milk, and even this should be used as

a seasoning rather than as a substantial part of the meal. Coarse bread, wheaten grits, the mildest vegetables and best fruits, constitute the best articles of food, and a sufficient variety, as far as the question of recovery is concerned; and even this simplicity will avail nothing unless strict moderation in quantity is at all times observed. In many cases, and in all in which I have advised the experiment, the patient has been evidently advantaged by taking a very light breakfast, a moderate dinner, and no supper at all. The oppressed lungs require all the room and all the quiet possible to obtain during sleep; and a trifling load or irritation in the stomach will often produce a restless night, and a more engorged condition of the lungs.

In all cases except those attended with considerable anæmia and severe dyspeptic symptoms, rather free water-drinking is advisable; not, however, to the extent of sensibly oppressing the stomach. From five to ten tumbler-fuls may usually be taken daily to advantage.

In regulating the bathing processes, we must keep in view a three-fold condition—general debility, ferocious excitement, and local inflammation. Counterirritants generally bear cold bathing well, but the baths should seldom be very long continued. When the superficial heat is not materially deficient, nor the hands and feet inclined to much coldness, the cold wet-sheet pack for an hour, followed by the tepid shallow bath, for five minutes; the half-bath at 72°, five to ten minutes, and the hip-bath at about 63°, fifteen minutes, with the constant employment of the chest-wrapper, constitute a plan of bathing which, with such modifications as will be suggested by individual circumstances, is adapted to the majority of cases. The walking foot-bath I have known peculiarly serviceable in several cases. The douche, of moderate force, is a useful adjunct in the early stage of the tubercular variety; and in the incipient stage of all forms, I have observed manifest relief of the local symptoms by the spray or fountain applied to the chest daily, or every other day. In the later stages, when the patient is troubled with rigors or chills, the dry pack, during the cold stage, will usually shorten the duration of the chills, and mitigate their severity. Night sweats may be checked or palliated by the rubbing with-oil-starch at bed-time, if the patient is able to bear it, if not, by sponging the surface with tepid water.

When extensive ulceration or tuberculation exists in the lungs, the patient will be extremely sensitive to cold, and the temperature of the water should be milder; care should be taken, under those circumstances, to avoid any bath which occasions much of a shock to the system.

For the benefit of such consumptives as are compelled to do the

best they can with home-treatment, it may be stated that very little hushing is absolutely essential, if the patient will adhere strictly to all the other resources of hygiene. One or two sponge-baths or towel-washings daily, and one or two sin-baths, with the emptying of the chest-wrapper or abdominal girdle, as the local symptoms are more prominent in the respiratory or digestive organs, all of which processes the patient can manage with very little assistance, will answer all remedial purposes, provided the patient keeps in the open air as much as possible, takes almost constant but not violent exercise, according to his strength, and lives on the smallest quantity of coarse, bland food, which will range above starvation.

I cannot conclude this topic without a paragraph of admonition upon the popular aliquivoie method of doctoring consumptives. I have known so many scores of persons killed outright, so many cases of incipient converted into confirmed consumption, and so many confirmed consumptives hurried out of the world, by drug-medications, that I cannot speak or write on the subject, except with language of earnest denunciation against the senseless and murderous practice of reducing and poisoning the systems of those unfortunate invalids, whose vital powers are wasting fast enough without being aided by "medical science." The ordinary treatment may be resolved, substantially, into opium, bleeding, antimony, blisters, and expectorants. Each article and each process, I affirm, is individually injurious, and all are collectively pernicious. The opium lessens the effort of coughing, by which the lungs endeavor to free themselves of a morbid secretion, but aggravates the actual diseased condition of the lungs. The bleeding lessens the patient's sensibility—feeling—for a brief period, and renders him less conscious of his disease; but it is at the expense of his vitality. The antimony lessens the febrile excitement, and diminishes the force of the circulation by desecrating the nervous influence, and destroying the ability of the muscular fibres to act at all. The blisters abate the pain and numbness in the lungs by paralyzing the neural sensibility, or overbalancing the lesion with a greater pain; but they render the intercostal muscles sore and sensitive, make a free expansion of the lungs more painful and more difficult, and thus tend to fasten the disease irreversibly upon the system. Expectorants, which are given to facilitate the secretion from the bronchial ramifications, make the patient more easy by increasing the quantity to be raised; and as the secretion of mucus, or pus, is already morbid and in excess, there can be no possible ultimate advantage in increasing it. I know very well the theories—and they are quite "too universal to mention"—upon which each practice is advocated and defended; but they are as absurd and irrational as the

practice is unsuccessful and death-dealing. Of the largely catalogues of specifics which have had and still have a reputation in the medical world for curing consumption—digitalis, cod liver oil, &c.—I need not speak. If the fact that all the patients who are cured by them soon go to their graves, is not a sufficient commentary, and if the fifty or fifty deaths in the city of New York returned weekly to the inspector's office by the physicians under the head of consumption, do not sufficiently attest the fallacy and fatuity of the popular theory and practice, so far as this malady is concerned, no explanation that I could offer would be of any avail.

**MARASMUS.**—A morbid condition, of which general emaciation of the body, with debility, without local inflammation or other disorganization, the affection of any particular organ or viscera, has long been recognised by physicians under the generic term *marasmus*. "*Leanness*," says Dr. Good, "is not necessarily a disease; for many persons who are peculiarly lean are peculiarly healthy." It is only when increasing debility accompanies gradual emaciation that the extenuation of the system is to be regarded as abnormal. The proximate condition upon which all the varieties of *marasmus* depends, is bloodlessness. The manufacture and supply of nutritive material is not equal to the waste, and this implies a primary fault in the digestive or assimilating functions, or obstruction in the capillaries.

**Symptoms.**—In the first variety—*atrophic*—the complexion is pale, often sallow; skin dry and wrinkled; muscles shrunken and inelastic; the appetite is feeble or capricious; there is little or no fever. With infants or young children the above symptoms are preceded by farcidity of the flesh, distended prominence of the abdomen, irregularity of the bowels, and pimplousness of the lower limbs. To these symptoms succeed emaciation and lagging, chilliness in the morning, flushed cheeks, restlessness and general ferocity towards evening; the urine is scanty, the faeces dark, green, or pearly, and highly offensive; the skin is hot, dry, and extremely irritable, and the child is constantly picking the nose, lips, corners of the eyes, fingers, and anus. This form of *marasmus* has been variously termed, in medical books: *infantile resistant fever*, *gastric resistance*, *infantile hectic*, *worm fever*, *malarial fever*, *stomach fever*, *low fever of children*, &c.

In the second variety—*anæmic*, *anæmia*, *emaciation*—the whole surface, and particularly the face and lips, are ghastly pale; pulse frequent and feeble; dejection from the bowels irregular, thick, and fetid; appetite greatly impaired; emaciation and debility extreme.

The third variety—*climacteric*—has been called, very inaccurately,



*decay of nature.* The term adopted is derived from the Greek physicians, who divided the period of life into two epochs or climaxes, at each of which they supposed the body was peculiarly liable to some remarkable and sudden changes for better or worse. It is characterized by general decline of bulk and strength, with occasional remission, subsequent to the middle period of life, without any manifest local disease.

The fourth variety—*tabes*—has been known by the simple appellation, *declivity*: it is distinguished from atrophy by the presence of hectic fever. It appears at any age of life, and is also characterized by the accompaniment of depression, spirits. It is the consequence of some lurking poison in the system, generally of a scrofulous or syphilitic character, or of excess or intemperance in the exercise of the animal propensities, or indulgence of the passions. When arising from undue indulgence in dissipated pleasures, it has been called *tabes dissoluta*, from the great weakness which is experienced in the back and loins. The habit of self-pollution often induces this malady in boys and girls, and sometimes even before the age of puberty.

*Special Causes.*—Scarcity of food; improper aliment, as baker's sweet-cake, and similar stuffs; profuse evacuations; scrofulous, mercurial, or syphilitic taint; mineral drugs, as mercury, arsenic, nitre, and potash; acid tartares and debilitating solutions, as opium, alcohol, tobacco, digitalis, iodine, hydriodate of potash; antiphlogistic medicines, as salts, vinegar, colicium; irritant drugs, as aloe, preparations of iron, nitre, of aloe, arsenic; cold, damps, and impure air, as found in low basements, dark cellars, subterranean caverns, near buildings; depressing moral influences, as the loss of friends, or reverses of fortune; violent passions; venereal excesses.

*Treatment.*—In every case of genuine tabes, the great morbid condition is deficient circulation in the capillary system. Whether the nutritive functions are abnormally rapid, or the excretory organs preternaturally active, or whether the functions of supply and waste are both morbidly affected, the single indication of cure is the same—to augment capillary circulation. Of course, all the causes which are operating to produce or continue the malady are to be sought out and removed or counteracted, and all the resources of hygiene are to be applied to the general invigoration of all the organic functions: but the nursing appliances are few and simple. The dripping wet-sheet or towel-soak, and the half or shallow-bath daily, followed by as much friction or rubbing over the dry sheet as the patient can well bear, are the best water-processes, and in most cases all that are necessary. The temperature is a matter of considerable importance. It should be as

cold as is consistent with prompt reaction; the proper rule, as in all cases of febrile eruptions, is to begin with water of a comfortable temperature, say about 80°, and very gradually reduce it as the patient becomes accustomed to the impression. For very feeble patients one bath daily may be sufficient to commence with; and each should take frequent exercises in the open air, by riding in a carriage if unable to walk. With regard to water-drinking and diet, the rules often herebefore mentioned are to be observed. In most cases the strict or dry diet is the most desirable.

The allopathic treatment consists mainly of stimulating food, as flesh-meat, soups, broths, &c., and irritating drugs, particularly the different preparations of iron; and although almost every author of that school coincides in this plan of treatment as the only one to be relied upon, yet almost every case on record so treated resulted in death! The form of the disease called *achromia* has lately attracted considerable attention in the medical profession because of its frequent occurrence in women soon after childbirth. One of the allopathic journals, a few months ago, related the particulars of six cases, all of which went down to death rapidly under the "toxic" and "supporting" system of iron and wine; and concluded the sad story of mortality with an "able argument" in favor of the more fratricidal as the only hope of the patient!

**ECTHIMATUM.**—The affection, called in English *elephant skin*, consists of a thick, hard, ragged, tuberculated, and irreducible state of the skin. It is attended with great debility, and a variety of morbid symptoms, the most fatal of which evince a general degeneration of all the fluids of the body. Among the most prominent of these are remarked, highly offensive perspiration, and hoarse, staring eyes.

The first variety—*Arithmia*—*Elef. Sympy*—is hereditary in Arabia and India, and is in those countries regarded as contagious. It is also known in the high northern latitudes of Norway, and is very prevalent in Iceland. The tubercles are chiefly confined to the face and joints; the voice is hoarse and nasal; the hair, except on the head, falls off; the nose is swollen and scabrous; the lips tumid; the nostrils preternaturally dilated; the lobes of the ears are enlarged and thickened, and beset with tubercles; the external sensibility is so obtunded that pinching or puncturing the skin occasions no pain. At length the tubercles crack and ulcerate; ulceration also appears in the throat and nostrils; the breath becomes intolerably fetid; the nose falls off; the palate is destroyed; the fingers and toes become gangrenous and drop off one after another.

The Italian variety is found chiefly among the Milanese and Venetian peasantry, who live in crowded lodgings, breathe foul air, and eat gross and unwholesome food. The disease comes on with lassitude, listlessness, gloom, weakness and stupor in the lower extremities, swelling, neural codition, &c. These symptoms, which usually abate in the spring, are followed, as the warm weather increases, with burning and itching over the whole surface, except that of the head, and these are succeeded by an eruption of tiny papule, scattered generally over the skin, and surrounding in patches of a shining red color. During the summer the tubercles desquamate, and the skin finally recovers its natural color. In the winter the patient recovers some degree of strength, but the symptoms reappear with increased violence with the return of spring, and again subside on the recurrence of cold weather, and so on for several years in succession. In the end, delirium, furious mania, or stupid insensibility, diarrhoea, and dropsy come on, and not infrequently the miserable victim terminates his sufferings by the act of suicide.

The variety called Astorian, is the Astorian type of Surgeon, and some other ophthalmists, and the real *de la rose* of the Spaniards. It is found among those who inhabit filthy, unwholesome, crowded, unventilated rooms, swampy valleys, &c. It differs from the preceding variety in attacking the head as well as the other parts of the body; the tubercles are peculiarly painful, highly fatal, more deeply furrowed with cracks, and more departing to the sight.

Treatment.—Cleanliness, is the broadest acceptance of the word, comprises the whole remedial course. Frequent cool or tepid bathing or washing of the whole surface, copious water-drinking, and a dietary restricted to plain vegetables, fruits, and farinaceous, are all the details which need occupy these pages.

HÆMORRHAGE.—Occasional or accidental hemorrhages occur in a great variety of diseases, not connected with any general tint or degeneration of the organism. But it is only when bleeding results from an impaired or partially diseased quality of the blood itself, or from a debility and relaxation of the coats of its containing vessels, or from both of these conditions together, constituting the hæmorrhagic diathesis, that the affection properly pertains to the genus before us. A flow of blood from the nose, lungs, stomach, bladder, uterus, or anus, may result from local congestion or accidental plethora—constituting the minor hæmorrhages of Dr. Good—and either of these conditions may depend on temporary or occasional causes; the group of diseases, therefore, included in the present genus comprises only the above

hemorrhages of various kinds. When the hemorrhagic diathesis has become established, nose-bleeding is most common during the periods of youth and of senescence; bleeding from the lungs occurs most frequently between the ages of fifteen and thirty-five; and in more advanced life the tendency is to more frequent hemorrhages from the abdominal and pelvic organs.

In the first variety—*epistaxis—nose-bleeding—the quantity of blood lost is in some instances enormous.* Examples are recorded of its continuance for several days, and even weeks, of the quantity of blood discharged amounting to ten, twenty, and even forty pounds.

In the second variety—*hemoptysis—spitting of blood—bleeding from the lungs—it is often difficult to determine from whence the blood issues; whether from the lungs, posterior cavity of the nostrils, the lungs, or the stomach.* In hemoptysis the blood is thrown up chiefly by coughing; the blood is of a dark, arterial hue; there is a sense of tickling about the fauces; moreover, it is usually preceded by flushed cheeks, more or less pain in the chest, with some degree of dyspnea. Sometimes, however, there are no precursive symptoms, and the blood is either harked or spit up uncoloured, more or less with saliva, and is of a darker color; but in this case an intense cough ensues, and the blood is mixed with a frothy mucus. When the spilling of blood is from the cavity of the nostrils, it will cease on lying proreudent, or bending the head forward, and will then probably flow down the nose. When it proceeds from the lungs, the fact can generally be ascertained by careful inspection.

In *hematemesis—vomiting of blood—bleeding from the stomach—the blood is of a dark color, is thrown up by vomiting, and is usually intermixed with food: the discharge is preceded by tension pain about the stomach, and accompanied with anxiety and faintness.* In some cases the blood is discharged from the breach of the same vessel.

In *hematuria—bloody urine—the hemorrhage is from the bladder or urethra, and the blood is discharged at the urethra, sometimes intermixed with urine.* The evacuation is preceded by pain in the pelvic region, and accompanied with burning.

*Uterine hemorrhage is called menorrhagia in most medical books, and described as an excess of the menstrual discharge.* This is a mistake. It is not a profuse external secretion, but an actual bleeding from the uterine vessels. In fact, it is always attended with a real deficiency of the menstrual flux. It sometimes occurs in young girls from habits of self-abuse; and is very liable to attack ardently fondles on the first cessation of the menses, and occasionally attacks females in advanced life.



In anal hemorrhage the blood flows principally from the lesser blood vessels; it is preceded by a sense of pain and weight in the rectum; and, when the patient is of rather full habit, by headache or vertigo.

*Special Causes.*—The ordinary exciting causes of *dysemæ*, depending upon an exalted or depressed organism, in which relaxation of the muscular coats of the capillary vessels is a prominent condition, may excite either form of hemorrhage we have considered, or the gonorrhœa exists, more particularly in the organ or part which is the seat of it. All these varieties of hemorrhage are, however, very frequently the result of external violence, or symptomatic of other local affections, in which case the treatment is to be mainly directed to the primary cavity. Thus epistaxis may be the result of exposure to the direct rays of the sun, sudden and severe cold in the head, violent coughing or sneezing, and various affections of the mind; hæmoptoe comes sometimes from an enlarged liver pressing against the lungs, suppressed perspiration, straining of the respiratory muscles, abuse in eating and drinking, suppression of cutaneous discharges, &c. Hæmaturia is often the consequence of shocks, contusions, vomiting, pregnancy combined with constipation, naked persons, ulcers, or cancer of the stomach, &c. Hæmaturia results frequently from a blow or a fall, given, stone in the bladder, stricture, severe inflammation, and the use of some kinds of drastic drugs, or cathartics. Uterine hemorrhage is occasionally caused by polypus in the womb, or other structural derangements; and anal hemorrhage is a very common symptom of hæmorrhoidal tumors, or piles.

*Treatment.*—The salubrious use—in excruciating cases in the bleeding stomach, balance the circulation, and soothe the general system. Locally the coldest water, or powdered ice, may be employed, with the flow of blood is checked. For nose-bleeding, a cold stream of cool water may be applied to the back of the neck, and cold water frequently washed up the nostrils; at the same time the head should be freely exposed to the cool or cold air, and the bleeding part be kept entirely unobscured. In bleedings from the lungs and stomachs, use of the coldest water, or even this of ice, may be successfully swallowed, while the coldest compresses are applied over the stomach and chest. In bleedings from the rectum and uterus, cold injections and cold hip-baths are the best applications. In all cases the patient must keep quiet, and avoid any source of bodily or mental excitement; and if there is general heat or inflammatory excitement, the whole body must be promptly cooled with the dipping-bath or ablutions. When the extremities are preternaturally cold, rubbing them thoroughly, first

with cold wet cloths and may with dry flannel, is advisable. To remove the fixed indurions, we must pursue the appropriate management for the promotion of general health.

**SCURVY.**—Dr. Good defines the general symptoms of the scurvy—*aportistat*.—"fixed spots on the skin, frost, emaciated limbs; languor, and loss of muscular strength—pains in the limbs."

The first variety, *simple or putridal scurvy*, is almost always a sequel of protracted and debilitating fevers, especially of the putrid type. Early, however, it occurs in persons of a gross and full habit, who are not regarded of hygiene in their personal habits. It is characterized by numerous small spots resembling flea-bites, chiefly on the lower arms, and legs; the rings in the nails are also pale.

In the *hemorrhagic variety*—*bad scurvy*—the spots are circular, of a purple hue, and of different sizes; sometimes in stripes or patches irregularly scattered over the arms, trunk, and thighs; occasionally there is hemorrhage from the mouth, nostrils, or viscera; and there is great debility and depression of spirits. In severe cases the patient has the bloodless, exhausted appearance observed in anæsthesia; and blood flows irregularly and often profusely from the lungs, stomach, intestines, and uterus, as well as from the mouth and nostrils.

In the *vascular variety*—*bad scurvy*—the spots are of different hues intermixed with livid, principally at the roots of the hairs; the teeth are loose; the gums are spongy and bleeding; the throat is very tight, and the debility is extreme. The joints soon become weak, and there is often a shrinking of the flexor muscles, rendering the limbs useless, and constituting what has been called *vascular paralysis*. The spots often evolve in large blotches, or form ulcers, which discharge a thin, fetid, sanguine fluid, mixed with blood; and in the last stage blood is discharged from the viscera as in the former variety.

**Spiritual Causes.**—Stale food, staid pretensions, an exclusive flesh-and diet, and vitiated air, are the ordinary producing causes; they are almost always associated with inattention to personal cleanliness. Either one of these causes alone may produce a troubled form of scurvy, but all operating together generate the most aggravated cases.

**Treatment.**—The productive condition upon which this disease depends is a putrescent state of the blood. The action of cure is, therefore, simply, to purify the blood; and a moderate course of general bathing, with a liberal supply of fresh vegetables and ferrous food, and plenty of good ripe fruit, will soothe the indurions. On account of the extreme livid and debility, the tepid half-bath, and drip-plaster, or towel-wash, are the preferable minor applications. Small

quantities of very cold water should be frequently taken into the stomach, and when the disposition to hemorrhage is great, cold water enemata should be occasionally employed. Broom-trefoil, wheaten grist, musk, pines, and good apples, are the best astringent fruits known.

**PLETHORA.**—The condition of the body to which nosologists have applied this term, is that of general engorgement or over-fullness; it is the result of excessive stimulation, or defective depuration, or both. Full-feeding and anxiety are the producing causes.

The sanguine, or tonic variety, is distinguished by florid skin, full strong pulse, turgid veins, with firm and vigorous muscular fibres; and the venous, or atonic, is denoted by a full but frequent and feeble pulse, smooth and soft skin, plump but unexpressive figure, and general languor or debility of the vital functions.

**Treatment.**—The remedial measure of first importance is active outdoor exercise. This may be commenced gently, and gradually increased; but it should always be to the utmost extent of the patient's capacity to endure, short of excessive fatigue. It is of little consequence what the kind of exercise is, if it is sufficient in quantity and degree. The next matter requiring attention is the food; this must be plain and coarse in quality, and as sparingly as more than actual nutrition demands. A moderate course of the "starvation regimen" for a few weeks would accelerate the process of throwing off the superfluous, hardening the structures, and invigorating the general system. Lastly, the whole surface of the body should have one or two dry rubbings in cold water, followed by thorough friction with a coarse towel or the flesh brush.

**SCROFULA—STYRIA—STYRIA VULGARIS—SCROFULA—KING'S EYE.**—The term *scrofula*—derived from *ary-far*, a sow—usually imports abscesses, sinews, and, or osseous tumors to which swine are subject. Scrofula has long been recognized as a disease common among swine, and it is doubtful if any of the deteriorated swine are exempt from it. It is well known that all hogs fattened in the ordinary method are extremely diseased, and a source of disease to those who eat them. In this country the general employment of that filthy animal as food, is the source of many morbid affections, manifested under a great variety of scrofulous, erysipelatous, putrid, glandular, and skin diseases.

**The Scrofulous Diathesis.**—A scrofulous constitution means simply, a frail, delicate, infirm, lax organization, a habit of body possessing a predisposition to the affection called scrofula, and peculiarly liable to develop glandular swellings, chronic ulcerations, tubercular formations, and va-

veral enlargements, whenever the existing causes of disease are applied with ordinary intensity. The predisposition, however, under favorable hygienic influences, may be dormant through life, and only be called into activity in the succeeding generation. The scrofulous constitution is said to be characterized by relaxed fibres, smooth and soft skin, fair and fine hair, a peculiar fulness and rosy appearance of the face, full upper lip, broad and not large eyes, long oblique eyebrows, delicate osseousness, large head, precocious brain, great sprightliness with female enlargement. But it must be remembered that this description applies only to extreme cases, or an inherited diathesis. The most usual pathological indications of the scrofulous habit are, strumous epithelioma, chronic inflammation and suppuration of the glands of the neck, purriform affections of the scalp, enlarged tonsils, *caruncles*, *epinal disease*, *ulcers*, *tumours*, *white swellings*, inflammation of the meninges of the brain, and tubercular consumption.

*Syphilis*.—The most common form of the disease—that form known as scrofula proper—appears in tubercular glandular tumors, frequently in the lymphatics of the neck, but also often affecting the external or internal coagulate glands, suppurating slowly and imperfectly, and healing with difficulty. In size these tumors usually range from that of a pea to that of a chestnut, but occasionally they are much larger. In some instances, scrofulous tumors appear in clusters about the neck, and armpits, and upon the breast. Usually the tumors which appear in infancy subside at the period of maturity. Scrofulous inflammation frequently attacks the external structures of the eye, the spongy, and sometimes the cylindrical bones, and the ligaments, cartilages, and membranes around the joints.

*Special Causes*.—Whatever debilitates the general health tends to bring the scrofulous predisposition into a state of activity. Various forms of scrofulous disease frequently follow severe febrile and chronic catarrhal affections, as measles, small-pox, scarletina, pox, erysipelas, etc., and are then mostly ranked among the sequelae of those diseases. I think they are much often a result of the drug medication. All mineral drugs, and particularly mercury and arsenic, which are so freely prescribed in all the above diseases, have a powerful influence in exciting inflammatory action and tubercular depositions in scrofulous constitutions. Narcotic medicines, as opium, tobacco, alcohol, etc., are also efficient exciting causes. The depressing antiphlogistics—opiate, earthy, or saline—as digitalis, verum, jalapa, nitre, opium, etc., and all debilitating processes as bleeding, leeching, cauterization, profuse evacuations, etc., tend to produce a scrofulous diathesis where it did not previously exist, and aggravate it when already existent. The



scrofulous diathesis may therefore be either inherited or acquired. A combination of bad food, impure water, foul air, dark tenement, sedentary occupation, and poisonous drugs, is sufficient to produce the scrofulous diathesis independent of any hereditary taint.

Treatment.—The disease before us being one of debility and obstruction, hygienic and purgative measures combine the indications of cure. And first among the restorative resources of hygiene are abundance of pure fresh air, and plenty of clear sunlight. Sanitation itself is better than all the tricks of the alchemist's modern medicine. The food must be restricted to the best fruits, vegetables, and farinaceous preparations, but allowed in liberal abundance. For city children good country milk is essential. The distillery shop-milk, on which so many thousands of our infantile population are daily fed, is a fruitful and frightful source of scrofulous affection, as well as other fatal diseases. Scrofulous patients should, as a general rule, drink water rather freely, especially in the fore part of the day. Generally one or two full tincts—tepid, cool, or cold, according to the debility or inflammatory action existing—daily are sufficient. Wet compresses should be constantly applied to the tumors so long as they manifest preternatural heat, redness, or pain; and the wet-sheet pack, followed by the dripping-sheet or half-bath, should be employed daily whenever the whole body is feverish, and once or twice a week during the whole course of treatment; a moderate *foulette* may be occasionally applied along the spine and limbs; and when the body exhibits symptoms of general obstruction, torpor, over-fatigue, and largeness, moderate sweating in the dry blanket will be serviceable. Critical boils, eruptions, and discharges are very common under active treatment.

CANCER—CARCINOM—CARCINOMA.—The Greek word, *carcinus*, means a crab; and the disease is thus named from the crab-like excrescences of the dark discolored veins of the cancerous tumor. Any part of the body may become the seat of this affection, although secretory glands are most frequently attacked. The breasts of females, testes, ovaries, glands, penis, tongue, stomach, cheeks, lips, and angles of the mouth, are its chief localities. The cancerous diathesis, like the scrofulous, may be either inherited or acquired, and notwithstanding many nosologists have regarded the disease as a purely local one, the majority now assent to the doctrine that the typical affection depends on a peculiar constitutional disorder, viz. or malcirculation.

Symptoms.—A cancer commences with a hard, fixed, knotty tumor, with dark, caeciform vessels, interspersed with firm, whitish, divergent

bowl; it is attended with acute, burning, lancinating pain, and terminates in a fetid, ulceroous ulcer, having thick, cold, distorted lips.

In the breast, the first appearance of the disease is a small indolent tumor, which is attended with an itching feeling; this is followed, after a longer or shorter time, by a swelling sensation, and this is succeeded by a shooting or lancinating pain. Eventually a sense of burning is experienced, and the skin becomes red and discolored. Adhesive bands are formed in the skin, which becomes puckered, and the nipple is drawn inward, sometimes entirely disappearing; the tumor ere long becomes more elevated, and feels knotty to the finger; at length the ulcerative process appears by the integument giving way at different points, through which an ichorous, acrid fluid, sometimes tinged with blood, is thrown forth; as the ulcerative action advances, a broad, deep excavation is made, which discharges a most offensive and fetid matter.

Causes of the tumor is known by darting pain in the part, shooting through the region of the pectoris, and usually indolent in the part, which are sensible to the touch; a profuse and incoercible menstrial or leucorrhœal discharge, or both; and as soon as ulceration occurs there is a profuse, bloody, or mixed discharge, characterized by the peculiar stench of the disease.

In the vagina and rectum the disease can be ascertained by the touch, in connection with the other symptoms; in the mouth, and on various parts of the external surface it is obvious to the sight.

In the stomach it is with difficulty digested. An acute and burning pain, tenderness of the epigastrium on pressure, nausea, rejection of food, offensive fœces in the bowels, are together strongly presumptive, though not absolutely pathognomonic, of the disease.

*Spinal Cancer.*—"Of the remote causes of cancer," says Dr. Good, "we know nothing." Other authors confess the same ignorance of the proximate cause, and of the nature of the cancerous diathesis. The most common of the exciting causes are, external injuries, as blows, depressing passions, spirituous liquors, narcotic medicines, gross, high-seasoned food, &c. That our friends, the allopathists, regard the disease as in some way or other dependent on or connected with a specific virus, is evident from the remedies which are put out previously favored in their books. These are, arsenic, mercury, and nightshade—the first, a powerfully corrosive poison, and the last two, deadly narcotics. The utter confusion which reigns in the bosom of medical book-makers concerning the real nature, causes, and proper modification of cancer, is evident enough from the following paragraph in relation to its treatment, found in Copland's Medical Dictionary. After enumerating two or three hundred external remedies, all of which

have enjoyed a high reputation, but which cannot now be depended on, comprising, in fact, nearly all the strong, pungent, powerful, and poisonous drugs and chemicals of the apothecary shop, use without remark:

"Of the numerous external cruetides recommended at various periods, the preparations of arsenic and quicksilver, charcoal and carot powder; the mineral acids, particularly chlorine, hydrochloric, and chloric acids; the chloroform, and many of the metallic salts; camphor, the balsams, and the terebinthine substances; stramonium, gallium, and myrrh; and the greater part of the antiseptic, astringent, detergent, and stimulating vegetable medicines, have obtained a greater degree of reputation; and when some of them are judiciously combined with one another, and with narcotics, they are deserving of notice as discutients in the early stage of the disease, and as palliatives in its ulcerating stage."

*Treatment.*—The constitutional treatment for cancer is essentially the same as for scrofula; and all that has been recommended for scrofula, is the matter of diet and regimen, is applicable here, with this exception—cancer requires even a more rigidly simple and a very abstemious diet. In this disease the "hunger-cure" is an indispensable auxiliary, or rather, perhaps, the leading remedial measure. Several cases are on record of fatal fungous, and cancerous ulcers, which had resisted caustics and the knife, being cured by a simple and strict dietary. [The celebrated Dr. Twissell, of New Hampshire, was cured, a few years ago, of a malignant tumor of the lip, which had been extirpated once, and repeatedly extirpated in vain, by restricting himself to a diet of bread and cream, the quantity being barely sufficient for necessary nutrition. Several bread, puddled corn, or other grain, with a moderate allowance of good flesh, and plenty of soft water for drink, constitute a dietary it would be difficult to improve upon. In all diseases connected with general debility of the secretaries, and in all cases where a strict diet is advisable, a good proportion of the food should be hard or solid, for the double purpose of insuring complete mastication and better guarding against excess in quantity. Medical authors of the old school are generally opposed to "low diet," in this disease; but with them low diet means sleep food, and high, or "generous" diet implies stimulating or mineral food. I am opposed to both of these plans, not only in this disease, but in all others.]

Every measure which can in the least conduce to the general invigoration of the system, must be unhesitatingly employed. Abstinence of flesh and pure rest-dew air is indispensable, and, as in scrofula, one, two, or three general baths may be employed daily. There is but little to choose between the different kinds of baths; the dripping-

sheet, half-bath, or plunge, as either be most agreeable to the patient's feelings. It is generally, however, ineffectual to deterge the skin thoroughly, and keep up a good degree of activity is the cutaneous excretory process, by occasional packings in the wet sheet, so managed as to produce moderate but not debilitating sweating; or, in very torpid individuals, the dry-packing, followed by the dripping-sheet, with very active friction, may be substituted.

The local treatment is a matter of more difficulty. Extirpation will generally succeed, if resorted to in the early stages, provided the general health has been judiciously cared for; but it unfortunately happens that the operation is not often needed upon such structural disorganization has proceeded too far to render it available. There is no doubt that, in some cases in which the local affection is much more prominent than the constitutional, caustics, or rather, perhaps, chemical irritants, have been successful. The matter of a cancerous growth, being an abnormal formation, can, without doubt, be acted upon and destroyed, and the peculiar action or secretion on which its existence depends arrested, by substances which will not act very injuriously on the healthy structures, nor materially interfere with the normal functions; but as yet we are ignorant of any such specifics or antiseptics. The "cancer quack," it is well known, use arsenic as the principal remedy to eat away the diseased structures; but death often results from the absorption of the poison. Tablets of potassium, and ulcers of silver are reported, on good authority, to have, in a few instances, destroyed the cancerous mass, which did not subsequently reappear. Some vegetable powders, as charcoal and lime, cobalt, have had a similar reputation. It is certain, however, that all these preparations fail in a majority of cases, and as anti-cancerous remedy it gets a consideration, if indeed it is a possibility. My friend and former patient, Dr. Schell, late of New Orleans, assures me that he is in possession of an antiseptic preparation which operates destructively on the diseased parts, and correctively on the morbid action, without usually injuring the sound structures. As he is about to put this matter to a practical test on an extensive scale in this city, I need not dwell longer on the subject in this place, save to remark that Dr. S. is not one of the numerous professional adventurers who are swarming in all our good cities, but a scientific, candid, and honorable physician. It is due, however, to him and to the subject to say, that he depends as much on constitutional as on local treatment, deeming the latter useless without attention to the general health. His attention is he in all respects specially hygienic.

I have not yet had an opportunity of testing refrigeration, or the



application of extreme cold to a cancerous tumor; but, judging theoretically, I should expect much benefit from it. It is always advantageous to keep the diseased part covered with wet compresses of an cold temperature as can be borne without increased pain; and I cannot help believing that actually freezing the part occasionally, by the application of refrigerating mixtures, is among our most promising topical applications.

**MELANOMA.**—The disease called melanoma, or black cancer, consists in the formation of a morbid product of secretion, of a black color, more or less impigmented, and staining or staining the organ or structure affected. Every part of the body is liable to these discolorations or tubercles, and sometimes all the structures are loaded with them. In the areolar texture the melanotic matter often accumulates in the cells, and forms tumors of various sizes.

**Symptoms.**—The color of melanoma varies from a dark yellow to brown, deep blue, approaching to black, and to complete black, which is the most common. The secretion is easily detected by its peculiar shades of color in any part of organ containing it, as the surrounding tissues are lighter colored, and form a remarkable contrast with it; it is usually of a pulsatious consistence, the tubercles perceived to be elevated, and scattered in groups; they are sometimes situated upon the surface, but more generally below it; an irritative fever, mostly of the hectic form, attends, and the patient experiences great debility. The secretion is nearly destitute of smell and taste; and as no vessels or nerves have ever been in it, the matter appears to be an amorphous deposit.

**Prognosis.**—Dr. Good remarks: "The cause, progress, and diagnosis, are at present obscure and unsatisfactory, and the treatment is yet to be learned." The majority of cases have first run, under amputable treatment, terminated fatally.

**Treatment.**—This need not detain us. The cure depends on restoring the normal condition of the secretory system, and this presupposes the employment of all the means for invigorating the general system and purifying the circulating fluids, which have been deranged under preceding heads, more especially when tracing of scirrhy, scrofula, and cancer.

**CACHEXIA.**—This is a condition of general morbidity of the body, produced by the use of alcoholic drinks. Examples of spontaneous exhalation as having occurred in persons long accustomed to the immoderate employment of spirituous liquors, are too well authen-

beated to be longer justified. The evolution of body talk is this strange phenomenon may properly be called the *alcoholic diathesis*. In a majority of cases relieved, similar attracted in life were the subjects of the malady. In some cases the self-consuming flame has arisen without any obvious exciting cause; but it is where, a fire, a lighted candle, the heat of a stove, or an electric spark, has ignited the combustible. It is a remarkable fact that the flame which dyscrasizes and reduces every fragment of the bodily structure to ashes, does not materially injure the common furniture or bedding with which it comes in contact; and more remarkable still is the statement that water, instead of quenching the fire, seems rather to quicken it. As this is the only mortal condition known which renders the human body consumable, and the only mortal fire which hydrogally cannot extinguish, the subject need not be further protected, save to point the obvious moral for the benefit of those it may concern—that all spirit-drinkers burn, and must, and disorganize their structures in an exact ratio to the amount of alcohol they consume, even if the alcohol does not consume them by a spontaneous, *hydrogallous* fire in return.

## CHAPTER VII.

### DISEASES OF THE EYE.

THE morbid conditions of the visual organ requiring attention in this place may be arranged as in the following table:

Ophthalmia	Structural Affections of the System	Tumors of the Eye
Acute. Chronic. Purulent. Inflamed. Suppurated.		Trachomatous. Chronic. Dyscrasias. Erysipelas. Oedema. Exanthemata. Fungus. Pseudo-Tubercles.
Structural Derangements affecting the Sight		Leucomata. Staphyloma. Symplochia. Symplochia. Symplochia. Symplochia.
	Injuries and Accidents	
		Exophthalmos. Exophthalmos. Exophthalmos.

The most common morbid affection of the eye is inflammation. &c

may attack any of its structures, but is most frequently seen in the membrane covering the external coat constituting the epithelium proper, or ophthalmia of authors. *Scleritis, iritis, vitritis, etc.*, designate, in detailed Latin, inflammatory stages of the sclerotic, iris, retina, &c. As they should all be treated precisely in the same manner as acute or chronic ophthalmia, as the violence or mildness of their symptoms approximates the character of either, they need not be separately considered.

**ACUTE OPHTHALMIA.**—This is the common form of active inflammation. It commences with a pricking sensation, as though dust were in the eye, soon followed by heat, redness, swelling, and extreme intolerance to light. Often there is severe headache, with more or less general fever.

**Treatment.**—Keep the eye shaded from strong light, but not closed from the air by close bandaging. Apply leeches round the eye in cold water, changing them very frequently, until the temperature becomes natural, and the redness disappears. Wet the head often in cold water. If there are regular chills and heat, employ the wet pack sheet once or twice daily for an hour, followed by the cold ablution. Move the bowels freely with tepid water injections. If the feet are cold, use warm foot-baths. The patient should eat nothing stronger than water-gruel, and but little of that, until the violence of the disease has very materially abated.

**CHRONIC OPHTHALMIA.**—This condition of mere eyes often results from riotous living, bad air, bad food, liquor, tobacco, &c., and is very often a sequel of mistreated acute ophthalmia. Millions of eyes are rendered miserable to look upon, or even by the disfigurements of discharging, weeping, itching, itching, blistering, bleeding, ulcerating, &c., to cure the acute form.

**Treatment.**—Particular attention must be paid to the general health. A daily rubbing-sheet, and a daily hip-bath, should be part of the treatment. Walking foot-baths are excellent auxiliaries. The eyes should be bathed several times a day in moderately tepid water at first, and finally as cold as may be found consistent with comfortable sensations after the application.

**PERFECT OPHTHALMIA.—PUYETIAN OPHTHALMIA.**—The form of inflammation is rapidly destructive, and requires prompt and energetic treatment. In addition to the pain, heat, and redness of acute ophthalmia, it is characterised by the enormous swelling of the eyelids,

most followed by the discharge of a large quantity of thick, yellowish, or greenish matter.

**Treatment.**—If there be much general heat of body, the wet-sheet packing should be employed two or three times a day, followed by washing the surface in tepid water. If the body incline to chilliness, the sheet should be wrung out of warm water. The eyes not to be very frequently washed with pure salt water, warm at first, then tepid, and then cold—never very cold. Attend to the bowels as above.

**INFANTILE OPHTHALMIA.—PURULENT INFANTILE OPHTHALMIA.**—Children of a few days or weeks old are often attacked with this formidable malady. The symptoms, however, usually come on with less violence, and progress less rapidly. But the common lotions and potions, washes and ointments, are very apt to aggravate the disorder, destroy the eyelids, or destroy the sight. The treatment is the same as in the case of the adult, substituting the warm or tepid bath for the pack.

**GRANULATED OPHTHALMIA.—GRANULAR EYELIDS.**—In this affection the conjunctival membrane, or white of the eye, is raised into little projections, presenting a rough, irregular appearance. It is a consequence of long-continued or continued inflammation. If not cured, it may in time occasion opacity of the cornea, by the irritation it causes, followed by blindness. The only chance of cure hygienically is by a persevering course of general and local treatment. Moderate bathing, say a daily rub-down and douche, the local application several times a day of very cold or cool water, or even powdered ice, with a strictly abstemious regimen, carefully avoiding all exciting condiments, and all sorts of stimulants, constitute the outline of the remedial plan.

**NEBULÆ AND SPOCKS, OR OPACITIES OF THE CORNEA.**—Nebulæ are superficial deposits in the transparent part of the eye, giving it a cloudy appearance; spocks are deeper seated, producing a dense and pearly appearance. They are caused by inflammation. Their treatment should be managed precisely as for granular eyelids, with the addition of means to excite powerful absorption. A strong douche and walking foot-baths are the best resources for this particular indication.

**ULCERS OF THE CORNEA.**—These occasionally result from long-standing inflammation, and are also sometimes produced by mechanical and chemical irritants. The treatment is, in all respects, as the preceding.



**PELVYCHIK.**—A small reddish translucent tumor, growing from the inner corner of the eye, or from some portion of the eyelid. It can be readily removed by cauter, the operation being entirely painless.

**STAPHYLOMA.**—A purely corneal, whitish mass, formed by the enlarged curves projecting between the lids. It is the consequence of severe ophthalmia, and of badly-managed eruptive fevers, as the small-pox. It can only be removed by a surgical extirpation; though a rigidly abstemious and hygienic regimen might, in many instances, prevent the disease from proceeding to a dangerous extent. The sight is always destroyed.

**CLOSER PUPIL.**—Inflammation of the iris is sometimes followed by an obliteration of the pupil. Vision is often partially restored by forming an artificial pupil.

**CATARACT.**—This is an opacity of the crystalline lens or its capsule. Its progress is very slow, and it generally commences without any apparent cause. The first symptoms of the approaching disease is infant vision. Objects seem enveloped in a mist before the eyes. A speck can then be observed in the center and behind the pupil. As the opacity increases, the sight grows dim, and vision is better in a moderate than a strong light.

**Treatment.**—Surgeons have three operations for its cure, 1st. Breaking up the crystalline lens with needles, which is probably the best. 2d. Depressing or pushing the lens aside from the angle of vision. 3d. Extracting the lens.

When this affection is first discovered, its farther progress may be arrested, and possibly a cure effected, by the management applicable to cataracts, specks, &c.

**AMAUROUS—DEEP SLEEP.**—A total or partial loss of vision from paralysis of the optic nerve, or an affection of the nervous structure of the retina. It is produced by inflammation, severe exposure to intense light, intemperance, gluttony, tobacco, shakeale liquors, excessive night labor, &c. Milton was a noble example of this affection. The defect of vision comes on gradually; letters and other objects at first look faint or confounded, or mix into each other; sometimes objects seem double, and at other times portions of objects are undistinguishable. Between the objects and the eye, numerous insects, cobwebs, or other substances seem to be interposed. The eye itself manifests little or no change to the observer. Sometimes flashes of light appear

believe the eyes and the head is often affected with vertigo, pain, and hemianopsia.

**Treatment.**—**Conferred anisotropia is irreducible.** If taken in its incipient stage, it may be arrested and generally cured. Being essentially a disease of calcination, the full hydropathic system should be thoroughly and powerfully applied. The general or constitutional treatment is mainly to be relied on, the local applications being of secondary importance. The simple and single leeches is, to invigorate the whole system. The rubbing wet sheet, the pack formed by the shallow-bath in plunge, sitz, and foot baths with occasional showers, should be adapted disadvantageously to the particular condition of each case. Every part of a hygienic regimen is important. In no disease is strict temperance in eating and drinking more indispensable. A little of the "langer cure" would be serviceable in all of these chronic malades of the eyes.

**Strabismus.**—Squinting, or cross eyes, is sometimes congenital, and sometimes produced by disease and accidents. Muscles, droopy in the head, worms, looking too much at objects obliquely, are existing causes. More generally it results from a permanent contraction of a particular muscle which holds the eye in a wrong direction. It is curable, by dividing the contracted muscle, an operation scarcely painful or dangerous.

**Procerithialgia.**—A form of chronic inflammation of the eyelids, attended with itching, redness, watery discharge during the day, and a sticky, glutinous secretion during sleep. Its cause and treatment are the same as of chronic ophthalmia.

**Trichiasis.**—Irritative soreness of the eye, from the eyelashes growing in toward the ball. Extract the inverted hairs, and bathe often in cold water.

**Ectropium.**—The eyelid is sometimes inverted, or turned inward. It requires surgical treatment, viz., the careful excision of the inverted edge of the lid.

**Ectropion.**—An eversion or turning outward of the eyelid. It requires a tedious delivery, and the lid must be carried as far ectropion.

**Hordium.**—Commonly known as eye. It consists of a small inflammatory tumor near the edge of the eyelid. It is very painful, but generally suppurates and heals in a few days. Frequent bathing of the

affected part with water of a temperature most agreeable to the feelings, lessens the pain and accelerates the cure.

**EXCROSCULES.**—Wart-like and other iriding tumors sometimes form about the eyelids; they are easily and safely clipped off with the knife or a pair of scissors.

**PROPTUS.**—A hanging down of the eyelid over the eyeball from relaxation or paralysis of the muscle, whose action elevates the lid. Frequent cold bathing, occasional lead-bath, gentle irrigations near the eye with the bare hand, and attention to the general health, are all proper, and generally all are necessary.

**FISTULA LACRIMALIS.**—This is a stoppage of the tear passage, caused by obstruction from a thickening of its lining membrane. The tears, instead of passing off by the nose, run over the cheek, giving the eye a watery appearance, especially when exposed to wind or cold. In protracted cases a swelling forms at the inner angle of the eye, sometimes forming matter. It requires to be treated on the same general plan as proptus. Usually the general health is so disordered as to render a rigidly abstemious diet advantageous. In bad cases it may be necessary to probe the obstructed canal, or wear an artificial tube.

**ASTHENOVIA.**—Weak vision. This depends on constitutional or local debility, and requires the full irrigating plan before mentioned.

**HEMERAUPTIA.**—Day-blindness. A peculiar sensibility of the retina, by which the patient sees better in the evening than in clear daylight. The Albino manifests more or less of this condition. It is irreducible.

**NYCTALUPTIA.**—This is the reverse of the former condition, the subject having much vision in the daytime, but very imperfect in the evening, or twilight. Glasses sometimes assist this night-blindness to some extent.

**MYOPIA.**—Short-sightedness. The subject cannot read ordinary print well beyond the distance of fifteen or sixteen inches. In looking at distant objects, he half closes the eyelids. It is most common in young persons. The oculist remedies this defect by concave glasses. Manipulations have been found successful as the difficulty depends on too great convexity of the globe of the eye. Flattening the eyeball by

Pressing gently with the fingers across it, from within outwardly, tends to restore the proper focal point of vision.

**PROSTRATION.**—*Far-sightedness.* The subjects of this complaint rest with the back or paper at the distance of two feet or more. The cornea is too flat, the pupil is contracted, and the eyes have a more sunken appearance. It is most common in aged persons. Convex glasses are prescribed by the oculist. This defect may be finally overcome in many persons by manipulating from without toward the nose, to make increase the roundness of the eyeball. Press the fingers gently from the outer angle of the eye inward, and rather around than across the globe.

**ECCHYMOSES.**—*Roady's east of sun.* This is the common black eye of roady character. Generally it comes from an untimely blow, but a fall, wing of an insect, or beach blow, may produce it. Bathe freely in the coldest water.

**SCIENTANCES IN THE EYE.**—Foreign bodies often insinuate themselves between the eyelids, causing great pain. Draw down the lower lid (fig. 183), and remove by a piece of muslin or paper. If the substance be under the upper lid, place a cotton across the lid, and draw

Fig. 183.



REMOVING THE LOWER LID.

Fig. 184.



REMOVING THE UPPER LID.

back the lid so that it is completely inverted (fig. 184). Vary minute pieces of wood are often driven with such violence that a surgeon is compelled to cut them out; but the operation should not be attempted by other parties, as they may destroy the eye. Inflammation is very apt to occur after these accidents, for which the eye should be well bathed with tepid or warm water frequently, until the pain abates; then follow with cool, and finally cold applications.



Lime and Rusts contact are very destructive to the eyes. Wash repeatedly with a mixture of a table-spoonful of some vegetable acid in a tumbler of water, as vinegar or lemon juice.

**BLIND EYE.**—From severe blows the eye is sometimes burst. Do not attempt to touch it, as vision may be irretrievably damaged by touching it with the finger. The careful surgeon will frequently be enabled to preserve sight. Place the patient at once at bed, darken the room, and treat the subsequent inflammation with cool compression.

## CHAPTER VIII.

### DISEASES OF THE EAR.

THE various abnormal affections of the organ of hearing may be conveniently grouped under the general heads of inflammation and deafness: the kinds of the inflammatory affections constituting the varieties of the former, and the causes of the mainly forming the varieties of the latter. This arrangement, I confess, has nothing classic or systematic to recommend it; but will it embrace two of the diseases belonging to this chapter, which must, therefore, be placed under a third head, thus:

Otitis	{	External Acute Inflammation,
		Internal Acute Inflammation,
		Chronic Inflammation.
Deafness	{	From Cold,
		" Hardened Ear-wax,
		" Exostoses,
		" Abscess,
		" Caries,
		" Altered Membrana Tympani,
		" Disease of the Eustachian Tube
		" Extrusion,
		" Nervous Affections,
		" Discharge,
		" Scalds.
Protrusions	{	Ears.
		Foreign Bodies and Lesions.

Inflammatory affections of the ear have usually been distinguished by nosologists into *acute* and *chronic*; the former being termed *otitis*, the latter *otorrhoea*. *Otitis* has been divided into *external* and *internal*, as it affects chiefly the external or internal ear; and *otorrhoea* has been regarded as *transient* or *permanent*, according to the character of the discharge. Other distinctions have been predicated on the causes of the disease, as *pyrexial*, *syphilitic*, etc.

**EXTERNAL ACUTE OTITIS.**—Acute inflammation of the external ear commences with slight pain, or sense of heat, or intense irritation, or itching, followed by more acute and distressing pain. The pain is augmented on pressure, by the motion of the lower jaw, and generally by the contact of very cold air, or very warm fluids. Hearing is confused, and unusual noises trouble the ear, and sometimes, within three or four days, a thin fluid is discharged from the meatus, which generally soon becomes thicker and puriform. Sometimes it is greenish, fetid, and extremely acrid. When the inflammation subsides, the meatus hardens into a cartilaginous or cheesy consistency, which, unless removed, obstructs the passage, and occasions partial deafness.

**Treatment.**—This is plain and simple. Fasting until the inflammatory stage materially subsides; the constant application of several folds of cold wet cloths to the part; occasionally syringing the ear with cool but not very cold water; and general bathing, warm, twice, or three a day, by means of the dripping-bath or wet-sheet pack, comprise all the useful plan of medication.

**INTERNAL ACUTE OTITIS.**—Acute inflammation of the internal ear is attended with a distressing sense of distension, painful throbbing, and nervous disturbance, consequent on the obstruction of the Eustachian tube, and the difficulty of discharging the secreted matter externally. The pain is deep-seated; there is often a feeling as though the ear would burst, and heat, clanging, or beating noises are heard, and the ear is painfully susceptible to stimuli. In some cases the face is flushed, the eyes are red and watery, the head delirious, and the attending fever of the typhoid character. If the disease is not quickly relieved, suppuration takes place, and the accumulated matters are discharged through an ulcrous perforation of the membrane of the drum, or into the throat by the Eustachian tube, or by a fistulous opening in the mastoid process of the temporal bone. The former is the usual termination; the second seldom occurs; and the latter result is extremely rare. Structural changes sometimes result from internal otitis, which partially or totally destroy the sense of hearing.

**Treatment.**—This disease should be met with prompt and vigorous treatment. In addition to the measures recommended for the preceding variety, cold water should be poured over the sides and back of the head, several times a day, and acetate issues at a time, or until the preternatural heat of the head is thoroughly subdued. The wet sheet must be resorted to sufficiently to keep down the general fever; and the bowels should be kept well cleansed by rectal injections. In some cases the purulent matter becomes so inspissated that it makes its way through the opening in the membrane tympani with great difficulty, in which case its discharge may be facilitated by very frequent injections of warm water into the external meatus. Sometimes the Eustachian tube is partially obstructed; this fact can be ascertained by causing the patient to make a forcible attempt at expiration with the mouth and nose closed; if the tube be permeable, bubbles of air, mixed with the fluid excrements, will escape at the external orifice. If the early treatment is thorough, and thoroughly hydropathic, few affections will almost always terminate by resolution, leaving none of those deplorable results which are so common, as supples, after a course of allopathic management. Indeed, under the ordinary drug-treatment the disease often continues with violence from three to six weeks, and not infrequently results in a complete disorganization of the internal ear.

**CHRONIC INFLAMMATION.—OTOSINUS.**—A prolonged discharge, or running from the ear, is frequently the consequence of acute otitis, and often one of the sequelæ of untreated eruptive fevers, particularly small-pox, scarlet fever, and erysipelas. The chronic form is the most common among delicate and scrofulous children; and frequently, under the popular system of treatment, continues for years. The prevalent variety is often connected with caries, or absorption of the surrounding bony structure. The patient, in this case, complains of a dull pain in the ear, extending over the side of the head; of impaired hearing; and exhibits a pallor and heartiness of expression. The mucoid process is obviated by the seat of inflammation, the external parts being then swollen and inflamed.

**Treatment.**—All forms of chronic abscesses, ulcers, or morbid or purulent discharges from the ear, should be treated on one and the same general plan. They always indicate depravity of fluids, or disability of functions, or both; hence the uniform indication is to cleanse, or strengthen, or both. First of all, the general health must be attended to. The coarse, plain, firm, and frugal diet, a careful abstinence from all saline, alkaline, or greasy foods or condiments, with a persevering application of such forms of general building as the

general constitutional condition demands, are the essentials of the plan. The rubbing wet sheet, with frequent hip and foot baths, is decisive, make a good bathing arrangement. If the skin is obstructed or bilious, the pack sheet should be constantly resorted to; and it is more or less frequently useful in nearly all cases. After the general health has become substantially improved, warm, and then tepid, and then cold injections, should be thrown into the ear, if, as is usually the case, there is more or less deafness, and this should be persevered in for weeks and months, if necessary.

**DEAFNESS.**—The pathological conditions, structural and functional, of the various parts entering into the formation of the ear, which may produce a greater or less deprivation of the sense of hearing, are very numerous; and many of them are exceedingly difficult of diagnosis. Fortunately, the worst cases are of rare occurrence; and those which are common are easily discriminated, and successfully treated.

**DEAFNESS FROM COLDS.**—A state of atony, or *side-palsy* of the auditory nerves, from "taking cold," frequently occasions deafness in one or both ears, for days, weeks, or months. It is curable by persevering tepid injections, with due attention to the general health.

**DEAFNESS FROM HARDENED EAR-WAX.**—An accumulation of hard *cerumen*, obstructing the function of hearing, is generally the result of an erythematous inflammation of the auditory passages. Persons of bad habit of body, torpid skin, deranged digestion, etc., are peculiarly liable to this affection. It is known by an increased sensibility or soreness in the meatus, a quass of itching, and often a burning or prickling sensation, evolution in the head, noise in the ear, with a tearing or dripping out of pus about the ear and head.

It is curable in the same manner as the preceding; but due attention to the general health is the leading indication; and among the most important of the hygienic appliances is a *richly plain and uncondensed diet*. Head-linens are useful when the inflammatory symptoms are prominent.

**DEAFNESS FROM EXCRESCENCES.**—Mucous excrescences, usually soft wart-like tumors, or spongy vesicular polypi, are sometimes found in the ear-passage. They are the result of chronic inflammation of the follicles of the meatus, or the membrane tympani. These excrescences are red, sensitive, and readily bleed when retained except in a few cases, when they are hard and indurated. To destroy their structure,



the meatus must be examined with the ear speculum, or a convex triangular reflecting prism of flat glass, by which light can be sent to the bottom of the external ear-passage.

**Treatment.**—In treating these conditions, the inflammatory action should be subdued, and the general health restored, as already mentioned, and then the fungus growth extirpated, after which, both rapid and cold injections should be employed for a considerable length of time. The polyps and other tumors can generally be eradicated by a pair of fine curved scissors, or a curved double-edged knife, having a blunt and rounded extremity, or a pair of delicate forceps, with sharp points, or with a ligature passed around them, and occasionally tightened until they are cut off. Such excrescences as are incapable of removal by mechanical means, can generally be destroyed by caustics, for which purpose they may be repeatedly touched with nitrate of silver. Its employment demands great care, to prevent the sound parts from being cauterized also.

**DEAFNESS FROM AERCEB.**—The disease is a phlogogenic inflammation of the cellular tissue of the passage, usually caused by severe cold or exposure to strong currents of air. It should be treated precisely like acute inflammation.

**DEAFNESS FROM CANCER.**—Such persons are afflicted with, and children of a scrofulous diathesis are very liable to, an inflammation of the periosteum, which generally results in inflammation of the bony straitum, and frequently terminates in exostosis of the diseased bone, by which the passage is narrowed or obliterated. The inflammatory stage should be treated by the means previously recommended, and as the bony process goes on, the passage should be prevented from closing by caustic or saline tubes. The hearing always remains dull in these cases.

**DEAFNESS FROM AN ALTERED MEMBRANA TYMPANI.**—Neglected or unduly treated inflammatory affections are commonly followed by a thickening, opacity, laceration, excoriation, or destruction of the membrane of the drum. Sometimes the membrane, examined by the speculum, appears as if covered by small projecting glands or follicles; at other times it is very red and vascular, the blood-vessels being distinctly visible. The grom is accompanied by humilage, so if travelling noise distorting in the ear, and by diminished hearing. The pain is increased by loud sounds, by variations of temperature, and by pressure upon the ear.

**Treatment.**—There is nothing possible in the treatment of this affection, so distinct from that of the other forms of inflammation and its consequences, already described. It is worth remembering, that in many chronic diseases of the head, and particularly of the ear, dermatives, iops, and feldsuffs are among the best applications. They should be as lengthy as the patient can bear them, without disagreeable feelings in the brain or lungs, generally thirty or forty examples. Artificial perforation of the membrane tympani has been frequently performed in cases where it was so thickened as to nearly or quite destroy the hearing; but it has seldom succeeded in restoring it.

**DEAFNESS FROM DYSURIES OF THE EUSTACHIAN TUBE.**—The Eustachian tube is sometimes obstructed by the presence of tumors in its vicinity, by inflammation resulting in swelling of the mucous membrane, effusion, contraction or adhesion of a portion of the canal. These conditions cannot well be ascertained without exploration by our forceps or catheters. Injections of warm water, and of air, have been employed to ascertain the nature and extent of any existing obstruction; but all these operations are attended with no small degree of danger. Several fatal accidents are recorded in medical journals, as having recently occurred in London, from the pumping of air from a press into the Eustachian tube. The wisest policy in these important cases is to be content with the thorough employment of all measures calculated to use general and local health.

Cerebral affections, inflammation of the throat, and eruptive fevers, not infrequently cause an accumulation of mucus in the Eustachian tube obstructing it, and occasioning more or less deafness. In such cases cold water gargles are an excellent addition to the general plan of treatment.

An inflammation principally confined to the mucous membrane of the Eustachian tube, which is often but the extension of a disease of the throat, frequently causes deafness. When this inflammation is confined to the gular part of the tube, the patient hears well at times, but fails immediately. His own voice sounds worse to him than the voices of others, and he sometimes a gurgling, crackling, or disconcerting sensation. The pain is greatly increased on yawning, or by the act of mastication. Ice-cold gargles, with the whole general anti-inflammatory treatment, should be perseveringly employed.

Enlarged tonsil membranes press upon the gular extremity of the Eustachian tube, as do to produce deafness, as also do fungous excrescences, polyps, and enlarged parotid glands. These obstructions, of course, must be removed by ligature or excision; though enlarged ton-

the ear generally be reduced by cold gurgles, and thorough general treatment, with a strictly abstemious diet.

**DEAFNESS FROM REVELATION.**—External injury, violent sneezing, or severe contusion of the neck, may produce a lesion, causing an extravasation of blood in the cavity of the drum. Cold compresses, gurgles, injections, and any other bulks demanded by the state of the general system, will generally produce an absorption of the extravasated fluid, if it does not pass off by the Eustachian tube, and remove the deafness.

**NERVOUS DEAFNESS.**—The term *nervous*, in this sense, is very indefinite. It is applied by medical authors indiscriminately to all forms of impaired hearing, unconnected with apparent inflammatory phenomena or structural changes. The proximate causes of this form of deafness are numerous: it may arise from simple atony, paralysis, or exhaustion of the nerves pertaining to the sense of hearing, or these nerves may be compressed by tumors, parietal formations, or extravasations, not manifested by any external symptoms; or from organic affections of the brain pressing on the origin of the nerves.

The most prominent symptoms which indicate compression of the nerves are vertigo or dizziness, severe and constant headache, noise in the ears, weak sight, and defective memory. It is generally incurable, although the means applicable to the preservation of the general health may prevent the further progress of the condition producing the deafness; and in some cases the hearing may be greatly improved by the ear-nervine remedies.

Palsy of the acoustic nerve arises from various causes, morbidities of the brain, rheumatism, apoplexy, fever, plethoria, and still more frequently from sympathy with some chronic derangement of other parts or organs, generally the digestive. The reader need not, perhaps, be told that in all the affections of this class, which, in fact, are many, the prospect of cure depends entirely upon the degree of general health which can be reproduced.

**DEAF DEAFNESS.**—Deafness in infancy may arise from original constitutional debilitation, or from structural diseases occurring in the early periods of life. When congenital, it is incurable; but in many cases resulting from disease in the first few years of existence, a cure may be effected by careful attention to the local condition and general health; it is especially important to avoid all uncondensed and stimulating articles of food in these cases.

**SENILE DEAFNESS.**—Old age should not, in a natural development and decline of the bodily functions, be subject to deafness, blindness, nor other loss of external sensibility, only in the ratio that all the physiological functions cease to perform their offices. But the usual habit of living tend to thicken the fluids and hasten these results prematurely—the fine capillary vessels of the delicate structure of the organs of sense become obstructed, and their functions impaired disproportionately to those of other and more vital organs. Hence the great frequency of deafness in old persons. We have no means to offer in this relation, of preventive or curative efficacy, save a life in conformity with the laws of life.

**EXACRE—OPRATA.**—This is usually symptomatic of inflammation, or of foreign bodies or insects in the meatus. But the affection, considered as *idiopathia*, is of a nervous, neuralgic, or rheumatic character, coming on abruptly, and disappearing suddenly, and is unattended with febrile irritation. Noises in the ear, and slight discharges, are frequent accompaniments of *otalgia*.

**Treatments.**—Fasting a day or two, syringing the ear with warm water, and a few tepid foot-baths, will generally soon remove the worst attacks. A steam or vapor bath, or a wet-sheet packing, will often remove the trouble at once. If the stomach is full, a warm water emetic should be employed, and if the bowels are not entirely free, copious warm water injections are advisable.

**FORNEX BODIES AND INSECTS.**—Children at play occasionally put beans, peas, small pebbles, and other substances into the ear-passages. These may remain an indefinite time without trouble; but frequently inflammation and ulceration ensue, with a constant discharge of irritating or foetid matter. They often produce the most intense agony, and are sometimes so surrounded by fungous growths as only to be detected by the most critical examination with the speculum, forceps, or probe. If the body be hard, as a stone or metallic substance, the grating of the probe will discover it.

Their removal by mechanical means requires the most careful and dextrous management, to avoid injuring the adjacent structures.

Insects and worms sometimes effect a lodgment in the meatus, producing awful suffering. There is little doubt that putrefaction to cleanliness, particularly in diseased or ulcerated states of the passage, attracts the animals to deposit their eggs there, which in time are converted into worms; and it is possible they may be generated there as they are in a morbid condition of the secretions of the mucous membrane of the



stomach and bowels. In either case they are reproducible and dangerous residents.

When they can be seen, they should be removed with the filix. A pledget of lint, covered with some viscid substance, as oil and honey, to which worms when small and numerous will adhere, will often enable us to remove them. They may be destroyed also by caustic points, as oil of almonds, or a strong infusion of green tea, or tobacco.

## CHAPTER IX.

### ERYTHEMATOUS INFLAMMATIONS.

IN the loose, slipshod medical literature of the day, the terms, erythematous, or erythematous, and erysipelatous, are indiscriminately applied to a great variety of local, eruptive, and sympathetic inflammatory affections, some of which are actually exanthems, or eruptive fevers, and others mere rashes, attended with little or no constitutional febrile disturbance. In its strictest sense, erythema means inflammatory blush, and is applied to those external manifestations of inflammation which are not necessarily connected with fever; whereas erysipelas is usually limited to an eruptive fever. Again, therefore, I find it necessary to surrender uniformity of method to convenience—my basis precluding the idea of a perfect nomenclological arrangement—and comprise, in the present chapter,

Erythema	{	Oedematous,	{	Rash Exanthem—Nettle-rash.			
		Erysipelas,		Ichthyous Exanthem	{	Apika.	
		Gangrenous,					Pomphig.
		Vascular,					
		Anatomical,					
		Child's,		Cutaneous Exanthem—Yew.			
		Fet.					

**ERYTHEMA.**—All the varieties of erythema are characterized by red, tense, fullness of the skin, disappearing on pressure, attended with a burning pain, and terminating generally in cuticular scales, or vesicles, sometimes it ulcerates, and more rarely in gangrene.

In the oedematous variety the skin exhibits a bright scarlet color; the affection spreads widely and deeply through the areolar tissue,

which often suppurates imperfectly, and occasionally sloughs and becomes gangrenous. The swelling is principally caused by extravasated serum; it is generally found in tropical constitutions, and usually denominated,—"extravasative inflammation."

In erysipielous erythema the color is of a deeper red, and superficial, with a determinate edge, usually in a serpentine or winding direction, the part first attacked swelling as the disease extends over the surface. This form is called "erysipielous inflammation" in many medical books. Sometimes, though rarely, it is attended with some degree of extravasation, producing a soft swelling, and attended with a shining surface. It often follows wounds, injuries, and surgical operations. In some cases it extends beneath the skin, and runs into suppurative and mortification, constituting the *erysipiel phlegmonodes* of Cullen.

Gangrenous erythema is characterized by a superficial dusky red color; a bloody serum separates the inside from the true skin; the cutis, when detached, exhibits dark brown spots, which are disposed to bluish and slough. It attacks chiefly the extremities. It is always found in extremely relaxed and debilitated constitutions, and in most cases in advanced age, especially when the vitality has been prematurely exhausted by intemperance and stercorism, as tobacco and alcohol. It is sometimes, however, seen in healthy infancy. Either of the preceding varieties may pass into the gangrenous form.

In the reticular variety the color is pale red; the surface is roughish, and covered with minute crowding vesicles, filled with acrid, often reddish fluid. Authors distinguish two sub-varieties: the first, design, in which the vesicles assume without a breach of the cuticle; and the second, *serpiginous*, in which the vesicles break in the part first affected, and the corrosive fluid produces marks of mucous ulceration at the redness subsides. This and the preceding variety were called (*guis sacer—body fire*)—by the ancients, from the superstitious notion that they were special influences of the deity, or of his ministers. There are also sub-varieties of this form of erythema, produced by the medicinal administration of mercury and arsenic: the former has been called erythema *mercuriale* and *hydrargyricum* in medical books.

The constitutional variety is the erythematous inflammation, which arises from dissection. Unlike all the other forms of erythema, and, indeed, unlike most other inflammations originating from a local cause, it is, at least in the great majority of cases, with a constitutional febrile disturbance; the first effects first appearing about the shoulder or arilla, while the injured part shows little or no inflammatory action. The characteristic symptoms, as well stated by Dr. Good, are:

"Inflammation, with lancinating pains about the axilla, shooting down the chest, colored by severe rigors and anxiety, succeeding rapidly to the dissection of a dead corpse, with a pustular or abscess of the hand of the anatomist; bluish, a deep crimson, with a spongy fulness, chiefly over the pectoral muscle; fever, a typhus." These few cases in which the local symptoms take the lead of the constitutional, are always the least dangerous; and this remark probably holds true with every form of disease resulting from local injury or infection.

The immediate cause of this affection has never been satisfactorily explained. It has been ascribed to a specific virus, to the irritation of a putrescent fluid, or to simple irritation or inflammation operating upon a peculiar idiosyncrasy, or constitutional habit. There is little doubt that a dead body, in the incipient stage of putrefaction, may develop some chemical element, which, analogous to a ferment, is capable of inducing a process of transformation or decomposition in some of the elements of the blood, or other fluids of the body, not very dissimilar to what happens in measles, scarlet, and other diseases dependent on a specific virus, or transmission of matter. To this view it has been objected that the disease is never taken from a corpse in the advanced stage of putrefaction; but I think the objection itself furnishes a strong presumption of the correctness of the opinion; for, it will readily be admitted, that all forms of matter which, in a particular stage of the process of decomposition develop an infectious or poisonous principle, must necessarily be changed into something different if the process of decomposition goes on. Thus yeast, the mucous virus, and almost all products of decomposition or putrefaction, may be resolved into very different and comparatively inert compounds of elementary matters, by further decomposition.

The local inflammation and the accompanying fever resulting from the bite of venomous serpents—as the cobra de capello, and rattlesnake, from whose bite death often results within twenty-four hours—in all essential circumstances, resemble the erythema before us; the chief difference being that the local and constitutional symptoms both commence and continue simultaneously, while the progress of the disease is much more rapid, the vitality being, as it were, destroyed as by an electric shock, by the first impression of the poison.

There are also two classes of insects which occasion more or less local inflammation of an erythematous character, in some cases followed by a constitutional disturbance similar to that of antimonial erythema, and in a very few cases terminating in death. The first class—as bees, wasps, hornets, ichneumon, etc.—sting, and the second class—as the gnat, horsefly, flea, bug, etc.—pierce the skin and suck the

**Blood.** Whether the injury results mainly from poison, or the irritation of a rough, jagged wound, is not, in all cases, clear. The following cut exhibits the instrumentality by which these insects pierce, cut, and tear the fine capillary network of blood-vessels and nerves:

Fig. 125.



STINGING AND BITING INSECTS.

In Fig. 125, *a* is a representation of the honey-bee; *b*, the grasshopper; *c*, insects of honey-suckle; *d*, sting of wasp; *e*, insect of bee; *f*, insects of dog.

The variety called *chilblain*, or *pernio*, affects principally the hands and feet, and is occasioned by exposing the parts alternately to extreme cold and heat. In very cold climates the nose, ears, and lips are sometimes destroyed by it. The skin is of a violent color, suffused with blue, and is troubled with an excessive and obstinate itching.

The remaining variety—*frigo*, *intertrigo*, *erectio* of the skin—is generally seen behind the ears of children, and about the groins and anus of children and adults. The inflamed part is of a bright red color, the surface is scaled, and the exposed skin oozes a limpid and acrimonious fluid; the discharge is often peculiarly offensive. The whole theory of its nature, advanced by Dr. Guai, in his elaborate "*Study of Medicine*," is in the following words: "It is an erythema with weak vascular action, and often considerable irritability, in consequence of such weakness." The plain English of the matter is this. It is an erythema with stony personal action, and always considerable excoriation of the skin as a consequence of such habits. I have never known a man,



eterna, or child who took a daily bath or wash over the whole surface, to be troubled with it.

**Treatment.**—In the first four forms of erythematous inflammation, we have to deal with local irritation, in connection with great general debility; in the fifth-named variety these conditions are coupled with the peculiar morbid action of a specific virus; while in the last two varieties the only morbid condition is irritation. The indications of cure are, therefore, sufficiently obvious.

Erysipelas erythema is rarely found except as symptomatic of some primary malady; but when occurring idiosyncratically, the local net overflows, frequently alternated with gentle friction by means of milk flannel to the bare hand, and the general tepid or cool ablution, or half-bath, constitute the leading remedial measures. Bandages of wet linen, when the abscesses are nearly painless, and the accumulated fluid produces very painful distensions, are frequently useful auxiliaries, provided they are evenly and smoothly adjusted.

From the facts that erysipelas erythema frequently attacks children soon after birth, and that children are sometimes born with it, we may reasonably infer that the malady is closely allied to the venereal habits, especially the dietetic habits, of the parent, or, in case of infancy, the mother. Hence a strict and rigidly simple dietary is of first importance in the remedial course. The greater tendency to general fever requires more thorough general bathing, and frequently a resort to the wet-sheet pack.

The gangrenous and vascular forms require more particular attention to the local treatment. While the general treatment is regulated by the superficial heat and the feelings of the patient, the temperature of the water being as cool or cold, but no colder, than is compatible with a precept and comfortable glow on the surface; the local applications should be very cold, as to produce a tonic and constringing effect. If very cold applications are painful, they need not be continued long at a time, but may be frequently repeated.

Apostolic authorities have not yet settled the question whether the antiphlogistic plan—bleeding and reducing, or the stimulating plan—bark and wine—is the most proper; for neither claims to be successful. Hennes, Hutchinson and Lawrence, wisest European surgeons, recommended making numerous and extensive incisions in the affected parts, with a view of arresting the disorganization of the structures; a practice which has been copied by several American practitioners, though not, I believe, with such success as well command its general repetition.

I am not aware that any hydropicist has had an opportunity of test-

ing the new system is a rise of erythema arising from dissection; nor do I believe that all cases could be cured by hydroquinol, or any other reagent. Some individuals who become thus affected are having those vicious physiological habits, especially in the matter of eating and drinking, are gross and unwholesome; hence they may have that degree of paucity of blood which can offer but slight resistance to the destructive action of the infectious principle; an attack, therefore, may be certain death. And the same remarks apply to the bites of venomous serpents. But the most hopeful plan of treatment is clear. The intensity and malignancy of the disorganising inflammation should be opposed by a vacuum of wet-sheet packs, sufficient to keep the morbid heat in check, and procure free perspiration, if possible. In a later stage of the disease, when the strength is much exhausted, and the extremities inclined to coldness, I would employ the warm wet-sheet, and apply hot bottles to the feet. Water-drinking should be insisted on to the full extent of the stomach's capacity to receive it without painful repulsion. I am not aware that any advantage is pretended to have been derived from any of the numerous local applications which have been tried. In the erythema from the bite of serpents, a ligature above the injury, if applied immediately after the bite, or the removal of the wounded part by excision, or the arterial supply, when resorted to instantly, have no doubt many times materially abated the violence of the disease, or possibly have prevented it altogether. And in some instances it is said that sucking the poison from the wound very soon after the serpent's fang has been withdrawn, has prevented all injurious consequences—the mouth being defended by a wash of olive oil. It is exceedingly difficult to determine the value of these resources, for the reason that the majority who are bit are not poisoned at all; hence a remedy perfectly inert may acquire the reputation of a specific. It is worthy of remark, however, that the firm of the rattlesnake—and the same is true of the fatal secretion of the skink, and, indeed, of the venomous tattoo of man, if not all poisonous serpents, reptiles, and insects—is not dangerously excessive when taken into the mouth or even into the stomach in considerable quantity; indeed, it has been employed in one, two, and three deep doses as an antispasmodic, in difficult breathing, catarrhic affections, &c., its sensible operation being rather agreeable, service, and somewhat exhilarating. Like the effect of nuxom, castor, and similar emulsi-facients. Compressing the wound around the bitten part very soon after the accident by a cupping-glass or any similar instrument, by interrupting the process of absorption, may contribute something to the safety of the patient. The general treatment is, of course, precisely the same, whether the system is poisoned from

the degenerated virus of a dead corpse, or the venereal secretion of the living reptile. The irritation or poison resulting from the stings or bites of insects is most promptly relieved by the coldest water, and the preferable mode of application is the constant stream or douche. The constitutional affection, should it supervene, requires the same management as the venereal variety.

*Chilblain* requires a daily general bath or ablution, and frequent local bathing in the coldest water. As a prophylactic, the patient should never suddenly approach a hot fire when the feet and limbs are very cold.

The last named variety, as already intimated, only requires that the skin be well washed at least once a day, or oftener, with pure cold water. If there be any sufferers who cannot possibly be satisfied without some "medicated" wash, a small quantity of either borax or soda soap may be added to the water. Like all the empirical infallibles of the day, "it will do no harm, if it does no good."

*NETTLE RASH—URTICARIA.*—Some authors have treated of this disease as a variety of scarlet fever. The prostration from it is slight, although the stomach usually manifests considerable disorder. The rash appears about the second day, attended with a peculiar itching, like the sensation produced by nettle-stinging; the eruption wanders from part to part, and fades and renews irregularly. It terminates in a few days with extensive desquamation.

*Special Causes.*—Irritating, constipating, or indigestible food; salt, vinegar, spices, narcotics, shell-fish, male menses, old cheese, fiery butter, roasted animal flesh, &c.

*Treatment.*—A warm water emetic, tepid injections daily to keep the bowels free, a daily dripping-sheet or half-bath, with plain and abstemious diet, are all that need be said on this subject.

*ARTHS—THRUSH.*—This disease consists of minute vesicles, containing, when matured, a whitish or milky fluid. Authors distinguish three varieties; *apostolic*, or *white thrush*, appearing in infants soon after birth, often extending from the mouth to the stomach, and even (scarcely usual) the vesicles greenish, reddish, and pearl-colored, and terminating in curd-like scabs; *malignant*, or *black thrush*, is seen most frequently as a symptomatic affection in typhus and malignant fevers; but it is said to be sometimes found idiosyncratically in old age, and other exhausted states of the vital powers; the fever is a strongly-marked typhus, and the scabs are dark-colored or black; *chronic thrush* is attended with great emaciation and hectic fever. The eruption

extends through the whole length of the alimentary canal. The edges of the tongue are affected with pimplæ, superficial ulcers appear within the mouth and fauces, and the stomach is at all times troubled with a sense of heat and acrimony. Diarrhœa often attends, and ulceration of the bowels are frequent consequences.

**Special Causes.**—Hot drinks; the excessive use of tea and coffee, especially the drug-colored green tea of commerce; highly-seasoned food; condensed air; repelled eruptions; too concentrated food; rancid grease of any kind; pork grates; retained animal putrefaction, from immoderation in eating the same, &c.

**Treatment.**—The abdominal bandage, the wet-sheet pack once or twice a week, cool injections daily when diarrhea attends, moderate drinking of cool, but not very cold water, a daily half-bath, sponging, or dripping-sheet; and the adoption of a bland, simple, strictly vegetable diet, save the article of milk; with a strict avoidance of all the producing causes, comprise the remedial plan.

**PRURIGUS—VERRUCA, OR BLASTOCYST FEVER.**—This affection is generally symptomatic of cerebral inflammation; though several analogies of celebrity describe it as an idiopathic disease, and even distinguish it into several varieties. Its diagnosis is, transparent vesicles scattered over the body; fibrinous with a red, inflamed edge, but without surrounding blush or turgescence; the vesicle contains a fluid which is pellucid or but slightly colored; on breaking, the vesicles are disposed to ulcerate; and the affection is accompanied with a fever of the typhoid type.

In the variety called *vulgaris*—*common vesicular fever*—the vesicles appear from the second to the fifth day, in successive crops, often extending over the mouth and intestinal canal; another variety, called *glandular*, is preceded by swelling of the neck and throat, and in Switzerland, where it has been chiefly noticed, it is considered as highly contagious; and a third form, termed *infantile vesicular fever*, attacks infants soon after birth.

**Treatment.**—As this disease, in its essential nature and causes, is nearly allied to the preceding, the treatment need not be materially different. In many cases, frequent sponging with tepid water is sufficient. M. Langlais, who has given us a description of the glandular prurigo of Switzerland, and who treated the disease by bleeding and vomiting, tells us, with a self-satisfaction peculiar to the school to which he belonged, in one part of his narrative, that "it was so contagious as to spread with great rapidity through numerous families, and so malignant that all persons affected by it die;" and yet, in situ



run to his bleeding and sweating, recommends it, "with the most sanguine hope that it will effect a speedy cure."

**Yaws.**—*Rubula* and *fronsula* are other terms by which this disease is known. Some zoologists have classed it among the eruptive fevers, although the attending fever is merely subcutaneous; while others have regarded it as properly belonging to the order of tumors. It resembles syphilis and other infectious diseases, in being communicable by contact; and the eruptions and contagious diseases, in rendering the body invulnerable to a second attack.

**Symptoms.**—The disease consists of numerous and successive tumors, commencing with more spots, and gradually increasing to the size of a raspberry, which they somewhat resemble; some of the smaller papule become real pustules, and discharge an opaque, whitish fluid when broken, and congregate into dense scabs or crusts; the larger run into fungous excrescences, and in their granular surface, as well as size and color, resemble the raspberry, from which their name is derived. These tumors, one of which becomes, at length, much larger than any of the rest, have but little sensibility, secrete very imperfectly, and discharge a serid, ichorous matter. They originate in scattered groups over the body, and their connection with personal uncleanness and infection is sufficiently evinced by the fact, that they are chiefly found in the groins, axilla, about the anus and perineum, though they often disfigure the neck and face.

This is one of the most disgusting diseases known; and nothing can exceed the revolting spectacle of a West India yew-house, where the slaves, suffering under this disease, are collected together. Dr. Good has distinguished the disease into two varieties—*African* and *American*. The diversity of the symptoms, however, is slight, and attributable wholly to local circumstances. In duration the disease varies from one to three months. Sometimes callous tumors are formed on the soles of the feet, in consequence of the yew-tubercles not being able to press through the thick skin; these are called *ballas*, or *crab-yaws*, and greatly impede the exercise of walking.

**Treatment.**—One or two tepid or moderately cold general baths, either by the dripping-sheet, pack, or ablution, with a strictly vegetable and rigidly simple and abstemious diet, are the proper therapeutic appliances.

## CHAPTER X.

## SPASMUS DUMEX.

THERE are a variety of diseases, whose most prominent phenomena are: irregular muscular contractions, in some cases amounting to a more or less permanent rigidity of particular muscles, and in others attended with convulsive agitation of some part or of the whole muscular system. These may be extensively grouped in the present chapter in the following manner:

Convulsive Spasm	<ul style="list-style-type: none"> <li>Convulsion,</li> <li>Epilepsy,</li> <li>Hysteria.</li> </ul>	Clonic Spasm	<ul style="list-style-type: none"> <li>Hicough,</li> <li>Snoring,</li> <li>Populatio,</li> <li>Nictation,</li> <li>Schmitan,</li> <li>Stretching.</li> </ul>
	<ul style="list-style-type: none"> <li>Tremor,</li> <li>Deficient Tremor,</li> <li>Shaking Palsy,</li> <li>St. Vitus' Dance,</li> <li>Expiation,</li> <li>Barbiers.</li> </ul>		<ul style="list-style-type: none"> <li>Hydrophobia,</li> <li>Acetonism,</li> <li>Tetanus,</li> <li>Locked-Jaw</li> </ul>
Synchonic Spasm	<ul style="list-style-type: none"> <li>Cough,</li> <li>Dyspnea,</li> <li>Asthen,</li> <li>Laryngismus.</li> </ul>	Contractive Spasm	<ul style="list-style-type: none"> <li>Cramp,</li> <li>Muscular Spind</li> <li>Distortion,</li> <li>Muscular Stiff-</li> <li>Joint,</li> <li>Wry Neck.</li> </ul>
	<ul style="list-style-type: none"> <li>Spasmodic,</li> <li>Revolutions,</li> <li>Scorbutic,</li> <li>Neuralgia,</li> </ul>		

The generic distinction in the above arrangement may be thus defined: The convulsive spasm is attended with muscular agitation, diminished sensibility, insiduity of action, followed by a tendency to looseness; the synchonic spasm is characterized by a simultaneous trembling, or chronic agitation of various sets of muscles, especially when excited by the will; the spastic spasm fluctuates, momentarily or permanently, the muscles of respiration alone; the clonic spasm is the forcible exclusion of one or more muscles in sudden and irregular motions; and the contractive spasm is an irregular form of muscular contraction producing rigidity.

Convulsives.—Deaths from convulsions, especially among the

infantile population of our country, are becoming alarmingly frequent. In the city of New York its fatality ranks next to that from consumption, and it is all the while increasing, and as far as I have been able to gather information on the subject, the same is true of nearly all parts of the United States. Why twenty or thirty children, all of them not far from two or three years of age, should die weekly the year round, in this city, from this disease, may well engage the earnest thoughts of philanthropists and physicians, and, above all, of mothers.

Although convulsion occasionally attacks persons in all periods of life, the disease, as already intimated, is conspicuously frequent and fatal in infancy; pregnant women are also, after the sixth month, during labor, and immediately afterward liable to the disease then denominated puerperal convulsions.

*Symptoms.*—The muscular agitations are violent, and with very young children the spasmodic movements are extremely rapid; the fingers work, and the eyelids quiver; the teeth gnash; sometimes the convulsive motions skip from one part to another; at other times the body is universally convulsed; occasionally the paroxysms interval and recur at irregular intervals; when they are accompanied with shrieks or yells. In infancy, the disease is usually preceded by twitchings and startings, and is accompanied with a blebbing about the eyes and upper lip. When it occurs in adults, the muscles are powerfully exercised, the mouth forces, the eyelids open and shut perpetually, or are stretched upon a full stare, while the protrusant eyelid rolls rapidly in every direction, and the whole face is hideously distorted.

*Special Causes.*—In the course of this work I have more than once had occasion to allude to the unhealthful habits and fashions which prevail in fashionable, and, indeed, in nearly all civilized society, as the source of rearing children. The disease before us is one of the many special evidences of the general bad feeding, bad dressing, and doctoring, and bad management that rule in the nursery; and as especially prominent among the special causes may be smothered concentrated food and confection—baker's bread, sweet-cakes, candies, etc.—and the purgative and purgatives which are given to stifle the pain and remove the corruption which they produce.

*Treatment.*—The first thing to be done is a counteraction—it is to expose the patient to abundance of cool air and plenty of cold water. There is no danger from any amount of ventilation in the coldest of weather while the fit continues. The cold ablution, or dripping-sheet, will answer for washing purposes, but the full bath, during which the surface is actively rubbed with the bare hand, is the preferable mode. As the bowels are usually clogged with ill-digested matter, or irritated

by acrimonious secretions, rapid injections should not be omitted. After the spasms are overcome, the prophylactics so simple as the internal use of brown horse-made bread, and milk, potatoes, squashes, pears, apples, etc., and a daily bath or universal wash-down.

**EPILEPSY.—FALLING-SICKNESS.**—Epileptic fits present all degrees of violence, from a slight general spasmodic agitation and tetanus of the muscles of the face, with a momentary suspension of consciousness, succeeded by a sense of drowsiness or stupor scarcely appreciable, to the most violent convulsive movements of the face and chest, while the limbs are fixed and rigid, and followed by several hours of total unconsciousness.

**Symptoms.**—In some instances the disease is ushered in by precursive symptoms, which warn the patient of the approaching attack. The most usual of these is a sensation of a cold creeping vapor from some particular part of the body, which has been called an *aurea epileptica*. But more generally the paroxysm comes on suddenly, and often commences with a startling scream; the patient is instantly deprived of all sense of perception and power of motion, and if standing, he falls, while the body is more or less convulsed; the muscles of the face and eyes are always much affected, and the countenance rudely distorted; the tongue generally protrudes from the mouth, which discharges a frothy saliva; the lower jaw is strongly convulsed, and the teeth, gnashing upon the tongue, often wound it severely; sometimes the urine and feces are discharged involuntarily. A profound lethargic sleep succeeds the severer attacks, from which the patient at length awakes, unconscious of having suffered pain.

When the disease is owing to an organic cause, the attack is more abrupt; the patient suddenly falls prostrate; there is more rigidity and less spasmodic agitation of the muscles, and optical illusions are very common. The form of epilepsy has been called *falling-sickness*, or *cerebral epilepsy*.

**Special Causes.**—Among the organic causes are various structural derangements, as induration of the brain, external injuries, internal tumors or collections of matter. When the disease is functional, the causes which specially excite the paroxysm is the individual predisposed to it, as—strong mental emotions, especially of the depressing kind, as anger, grief, fright; indigestible food, an overloaded stomach, or any source of gastric irritation, may prove an exciting cause; repressed eruptions, and the sudden suppression of cutaneous eruptions; have induced it; exhausting indulgences, either in the exercise of the lower animal propensities, or in the use of stimulants and narcotics, frequently



occasion an attack; confirmed drunkards are peculiarly liable to it; in a few instances the disease has arisen from worms.

*Prognosis.*—The chance of cure will be favorable or unfavorable as the symptoms do or do not indicate functional derangement or local irritation as the cause. When connected with deficiency or malformation of brain, organic changes, or exhausted nervous power, it is generally, and probably always, incurable.

*Treatment.*—During the fit very little can be done, on account of the muscular clonus. Cold water, however, should be freely applied to the head, cold compresses to the stomach, and warm applications to the feet. In the intervals, the cure must be prosecuted by a careful attention to the general health; and here we have another condition, where the details of hydropathy is more important than the remedy, although both are useful. So utterly powerless for good, if not mischievous, has the drug-treatment proved in this disease, that one of the most experienced of the old school authors, Dr. Armstrong, testifies that he has seen more benefit derived from removing the exciting cause, than from any thing else. "As to diet," his language is, "simplicity is the kind of food, and moderation in its quantity, is the golden rule." In making the practical application of this golden rule, we should prescribe the dry diet as consists of good brown bread, roasted potatoes, and good baked or boiled apples, as the leading articles. Caution must be exercised not to distend the stomach unduly with a variety at a meal, or even the blindest anemias; very little drink should be taken at meals, and the supper should be extremely light, or what is better, altogether omitted. Among the bathing processes, derivative applications—shower-baths, sitz-baths, and foot-baths—should take the lead. As a general rule, they should be of short duration, and frequently repeated, as so to guard against determination to the brain. If the skin evinces considerable torpor or obstruction, the patient should be thoroughly rubbed in the dripping-sheet, or paked occasionally.

*Hysterics.*—*Hysteria.*—This disease is commonly supposed to be peculiar to the female; but some authors, having noticed all its characteristic symptoms occasionally in the male subject, have described two varieties—*hysteria feminini*, and *hysteria masculini*. It is certainly more frequent in the female, and most disposed to show itself during the menstrual period.

*Symptoms.*—The perceptive signs, which, however, do not always exist, are—a sense of nausea or sickness, faintness, palpitation, depression of spirits, weeping, crying, etc., without any assignable cause.

The fit now follows, indicated by a collapse or shivering over the whole body; quick, darting pulse; a feeling of acute pain in the head, as though a nail were driven into it; there is often an acute sense of pain in the left side, about the flexure of the colon, with a sense of distension, giving the idea of a ball or globe rolling itself about in the abdomen, and gradually ascending upward till it gets into the stomach, whence, rising to the throat, it occasions a sense of suffocation, as if an extraneous body were passing there; this feeling has been called *globus hystericus*. The convulsive struggle now commences, which is sometimes extremely violent; the trunk of the body is twisted backward and forward, the limbs are variously agitated, the fists are firmly clenched, the breast is spasmodically beaten, the muscles of the chest are agitated in every way, and the patient bursts into violent paroxysms of laughter, sobbing, or screaming, often incoherent expressions, and is in a state of temporary delirium. On the cessation of the spasm, there are sudden exertions, and a copious discharge of liquid urine, the patient usually lies stupid, and apparently almost lifeless, for a short time, but in an hour or so recovers the exercise of sense and motion, without retaining any distinct recollection of what has taken place, but feeling a severe pain in the head, and a general soreness over the whole body.

**Diagnosis.**—Hysteria may be distinguished from epilepsy by the insensibility being only partial; by the sighing and sobbing respiration; by the *globus hystericus*; by a peculiar trembling of the eyelids; and by the absence of distortion of the features. In a milder and modified form, the paroxysm consists of sudden lassitude, laborious breathing, swollen neck, flushed cheeks, and a cloud and trembling eyelid, and the patient comes out of the fit talking incoherently, or crying and sobbing.

**Special Causes.**—Intense mental emotions, especially grief and anxiety; constipated bowels; exposure to draughts; obstructed menses; phlebotomy; hot, evening drinks, as tea and coffee.

**Treatment.**—A hysterical paroxysm is almost the only disease in the treatment of which *adiposac* and hydrostatic practitioners have failed. It is true the books recommend smelling-salts, *camphida*, *foetid spirits* of ammonia, ether, camph, musk, valerian, stonic-saltzys, spurs, &c., yet the same book-makers are kind enough to tell us they do no good! Says Dr. Gray, author of a *Medical Paraphrase*: "Cold allusion is the only remedy which can be relied on, and is worth a whole pharmacopoeia of antispasmodics." Drs. Hasper, Good, Cooper, Neill, Smith, and Copland—all accredited authors of the drug school—recommend the cold-water practice. And Dr. Alfred Saxe, F.R.S.,

surgeon to the *Bark of England*, etc., gives the following directions, illustrated by a plate, both of which are worth copying:

Fig. 100.



TREATMENT OF HYSERIA.

"Place the head over a basin, and pour water from a jug over the head and chest till the patient becomes chilly and tremors. Never use any thing but cold water for the hysterical fit, unless the party turn very cold. When you should discontinue it, and apply warmth to the feet. I once saw the cold applied for three hours, but the patient was quite well the next day."

To correct the condition on which the hysterical paroxysm depends, we must, during their intervals, employ the abdominal bandage, frequent hip-baths, and occasional dropping-shoots or jacks. In almost all cases the bowels are more or less constipated, and the diet must be regulated accordingly.

**TREMOR—TREMBLING.**—A tremulous agitation of the head, limbs, or both, especially on some voluntary exertion, often occurs in the progress of acute and chronic diseases. But in some instances the affection appears disconnected, so far as we can observe, with any distinct primary disease, although it is manifestly in all cases symptomatic of nervous exhaustion. It is produced by violent exertion, vehement indulgence of the sexual or sensual passions, by various poisons, as mercury, lead, opium, tea, tobacco, and is only to be cured by religiously and perseveringly absteining from all the debilitating causes which conduce to it; in brief, all the voluntary habits must be thoroughly ortho-therapeutic.

**DELIRIUM TREMENS—DRUNKARD'S DELIRIUM.**—"The Shakes,"

says Dr. Duane, "is unfortunately very frequent in the United States;" to which may be added, that hardly a day passes without some instance of murder being chronicled in the newspapers as committed under its influence; nor can any different result be expected, seeing as our law-breaking representatives authorize and countenance by special license, one class of our fellow-criminals to poison all the other classes by selling them intoxicating drinks.

*Symptoms.*—Delirium, during which the patient recognizes those about him, answers questions rationally, and does hurriedly what he is told to do; the hands, lips, and muscles generally, tremble more or less, especially when speaking, or making any voluntary effort; the patient is restless, sleepless, talks monotonously, and evinces a great anxiety to be doing something; he fancies that he is surrounded with enemies, or that he is in a strange place, from which he is constantly endeavoring to escape; or he thinks some great evil has befallen him, or is impending; he is suspicious of those about him, and is haunted with frightful images or sounds; and often appears to be searching earnestly in unlikely places after something on which his mind is intent. There is frequently profuse perspiration, a frequent pulse, and a moist and slightly furred tongue. In the most dangerous attacks the patient is himself not violent; but in more moderate cases, when the muscular energies are less prostrated, he is sometimes extremely furious.

*Special Causes.*—The habitual employment of alcoholic beverages in most cases; in a few instances the disease has arisen from the use of opium, tobacco, and tea. The immediate exciting cause is generally sudden abstinence from the accustomed stimulant, particularly if such abstinence has been preceded by an unusual debauch.

*Treatment.*—When the patient is not ungovernable the wet-sheet pack is the most soothing process we can employ; in other cases we must rely mainly on the tepid spongio-bath, unaccompanied with active and penetrating friction; the dripping-sheet is also one of the best appliances when a considerable febrile heat exists. When the stomach is full, evinced by bilious taste and fetid breath, a warm water emetic is useful, or even the copious drinking of warm water without emesis; and a daily tepid injection is almost always serviceable. Cold cloths should be applied to the head, and when there is the least indication of effusion of the feet, the warm foot-bath should be prescribed. Either of the general baths may be repeated two or three times daily, or all of them may be alternated. When the patient is too irritable or restless to permit any general bath to be employed in the ordinary way, wet towels may be applied to the chest, abdomen, and thighs, and frequently renewed; and copious cold water injections may be thrown



up the bowels. In all cases cold water may be drank to any extent the thirst demands.

In relation to drug-treatment in this disease, the allopathic school is about equally divided between large doses of opium and liberal draughts of brandy. Dr. Jackson, in his "*Domestic Hydropathy*," tells us that the only way to cure the disease is to procure sleep; and that there is no way of procuring sleep but by means of large doses of opium; but the doctor discovers his own climax of absurdity when he adds that, although the opium induces a sleep, which cures the delirious tremor, the patients often die in the sleep which the opium induces!

**SPASMS PARSY.—PARALYSIS ACUTISSIMA.**—The term palsy, is not strictly applicable to this disease, for the reason that, although there is a diminution of muscular strength and of voluntary power in the part affected, there is no absolute loss of muscular motion, nor of sensation, one of which, or both conditions, being always present in genuine paralysis.

**Symptoms.**—"Persistent agitation of the head or limbs without voluntary excitement; body bent forward, with a propensity to run and fall headlong; usually appearing after maturity." The first symptoms usually noticed are a slight sense of weakness with a propensity to trembling, especially in the hands and arms, but sometimes in the head. These increase gradually and almost imperceptibly, until in a few months, the legs begin to be similarly affected, and the body bends forward. As the disease progresses, the tremor becomes constant and universal; the muscles refuse to act in obedience to the will; and, should the treacherous agitation be stopped in one limb by a sudden change of posture, it soon makes its appearance in another. When he attempts to walk he is thrown on his toes and forepart of his feet, and thus compelled to adopt a running pace. In the advanced stages the tremulous motions also occur during sleep; the bowels become torpid, mastication and deglutition are difficult, and the saliva continually dribbles from the mouth. Toward the closing scene, the power of articulation is lost, the ordinary excretions are irregular, and coma with slight delirium occurs.

**Special Causes.**—Long exposure to damp, unwholesome vapors, nervous excitement, as ardent spirits, strong tea or coffee, narcotic poisons, as tobacco, nightshade, &c.; mental vapors, especially mercurial; drastic purgatives. Those who are employed in mines, and hence constantly exposed to the exhalations of mineral vapors, are the most frequent and severe sufferers from this disease.

**Treatment.**—As the proximate cause is simple debility of the whole

between systems, the simple indication of cure is to strengthen the system; the only point of skill is in adapting the processes to the particular condition of the patient. The best general plan is, a *daily ablution*, or thorough rubbing in the dripping sheet, early in the morning, once or twice shallow as hip-baths in course of the day, followed by active friction with the dry sheet or dry hand; and where the system has been evidently poisoned with metallic excretions, moderate sweating, either in the wet or dry sheet, as often as twice a week. Cold water should be drunk rather freely, and cold injections employed daily, just preceding the time when the bowels are or should be evacuated. The wet girdle to the abdomen is worth something. The food should be of the most bland and unconcentrated kind, as cracked wheat, dry brown bread, barley, potatoes, baked, boiled, or stewed apples, &c.

Nothing can be more obvious than the nature of this affection; and nothing can be more ridiculous than the reasoning on the subject in medical books, not even abridging the practice recommended. Thus Boerhaave ascribes the affection to a diseased state of some portion of the cerebrum; and Mr. Parkinson traces the seat of the disease to the cervical portion of the spinal system, from which he supposes it to shoot up by degrees to the *medulla oblongata*. "The cerebral process," says Dr. Gual, "is not very clearly indicated;" yet he recommends stimulants and other stimulants to the neck; *isthm.*, *caustic*, and even the *red hot iron* applied to different parts of the spine; and for internal remedy, *prussic acid* and *arsenic*!! Dr. Elliotson treated several cases with copious bleeding, blisters, mercury, calomel, ipec, and sub-carbonate of iron; but save in a single instance, no benefit whatever was experienced. Such is a fair specimen of the "medical science" of the day.

**CHOREA.—St. VITUS'S DANCE.—CHOREA SANCTI VITI.**—This disease is characterized by "alternately tremulous and jerking motion of the face, legs, and arms, especially when voluntarily called into action, resembling the grimaces and gestures of buffoons." The name of St. Vitus's Dance—is colloquial French, *Dance de St. Guy*—according to Horvath, was given to this affection, or some other resembling it, in consequence of the reported cures produced on certain women of disordered mind, upon their visiting the chapel of St. Vitus, near Ulm, and dancing from morning till night, or until completely exhausted. Many marvelous stories are related of these dances by the old writers, none of whom, in their easy credulity, give the patients credit for having danced a whole week or whole month together.

**Symptoms.**—The disease appears most frequently from the eighth to

the fourteenth year; and attacks boys and girls indiscriminately, but chiefly those of weak or impaired constitutions. Its approaches are slow, and are marked by variable and often ravenous appetite, loss of nasal viscosity, swelling and hardness of the lower belly, and, in general, conspurcous bowels, which symptoms become augmented as the disease advances; slight, irregular, involuntary motions of different muscles, particularly those of the face, precede the more violent convulsive agitation. The convulsive motions present a great variety of appearances. The muscles of the extremities, of the face, those moving the lower jaw, the head, and the trunk of the body, are each at different times, and in different degrees affected; the patient walks unsteadily, his gait resembling stammering or jerking; and sometimes walking is impossible. The action of the muscles is constant during the day, but ceases during sleep. The eyes gradually lose its lustre, the complexion becomes pale, and the countenance is expressive of languor and vacancy, giving the patient a fatuous appearance.

*Special Causes.*—Repelled eruptions; lead; mercury; constipation; narcotics; worms. Dr. Good remarks, "The predominant cause of this disease is an irritability of the nervous system, chiefly dependent upon debility, and particularly a debility of the stomach and its relations organs." The prognosis is certainly very bad, but if it has any particular meaning I am unable to discover it. Dr. Armstrong gives us a less elegant but more practical view of the subject. "Chorea," says he, "is always preceded by some disorder of the stomach, liver, or bowels; and the affection which takes place in the brain and spinal cord seems to be secondary. You may always trace in this to some improper diet."

*Treatment.*—The whole gist of medicine used in the preceding disease is applicable here. The great majority of cases, however, will be found in connection with torpid liver, costive bowels, and obstructed skin; for which a thorough daily absterge, an injection every day, or every other day, and a diet of brown bread, wheaten grits, potatoes, and a moderate quantity of the best fruit, will be sufficient.

*HALLUCINÆ.*—This disease was first described by Linnæus, and so named because he supposed it to arise from eating the seeds of a species of wild radish, the *ryphanis repulicatum*. Other writers have imputed it to squared eye or ergot, and others to still other vegetable poisons. The symptoms indicate the operation of a narcotic; and probably several plants, and perhaps also different vegetables in a state of disease or decay, or in a particular stage of putrefaction, may generate the poisonous element.

*Symptoms.*—The disease commences with cold chills and lassitude, headache, and anxiety about the preœordia; these are followed by spasmodic twitching, and afterward rigid contraction of the limbs or joints, with excruciating pains, often accompanied with fever, coma, or delirium, a sense of suffocation, and a difficulty of articulation. It continues from one to four weeks, and when fatal, terminates with a diarrhea, or convulsive paroxysm.

*Treatment.*—Moderate cold water-drinking, the free employment of cold water injections, the wet-sheet pack daily, or twice a day, when there is considerable feverishness, and at other times frequent tepid abutions, constitute the leading resources of the curative plan.

*Note.*—An anomalous disease has, during the last ten years, prevailed in different parts of this country, more frequently in our Western states, to which the physicians have been unable to assign a name, and which strikingly resembles the disease before us. If it is not identical so far as its causes are concerned, it is sufficiently similar in character to be appropriately treated on the same plan.

*Barbiers.—Bresbury.*—This affection is probably unknown in this country. It is common to various parts of India, and of very frequent occurrence in Ceylon, and on the Malabar coast.

*Symptoms.*—General lassitude, painful numbness of the whole body, stiffness of the legs and thighs, and a spasmodic retraction of the knees, and inability to walk, are among the early symptoms. In some cases the limbs are paralytic, and spasmodic actions affect irregularly the muscles of the body, chest, and larynx. In a later period of the disease, the legs swell, and subsequently the whole body becomes bloated and redematous, the internal cavities are filled with fluid, and, in fatal cases, extreme difficulty of breathing, great weakness, insupportable anxiety, constant vomiting, and general convulsions, close the scene.

*Special Causes.*—Sudden transitions from a dry to a damp atmosphere, and from sultry calms to chilling breezes, are assigned, by medical writers, as the principal causes. But as the subjects of its attack are almost invariably persons of weakly constitution, irregular lives, debauched habits, or liquor and tobacco smokers, and whose twenty years of age, it is evident that the causes named are only existing circumstances, when the constitution is predisposed by debility, or the bad habits which cause the debility.

*Treatment.*—A daily shower and half-bath, plain food, regulated exercise, according to the strength, and cold injections, would seem adapted to the therapeutic indication, which is essentially tonic.



**Cough.**—There are three kinds of cough which are ranked as idiopathic diseases by authors—common cough, dry cough, and hooping-cough. They are all attended with a spasmodic and violent expulsion of air from the lungs, from a spasmodic or convulsive action of the respiratory muscles; the first and second varieties are often symptomatic of a multiplicity of other diseases.

**Symptoms.**—Common cough, or hoarse cough, is accompanied with an expectoration of a mucous or serous fluid. The dry cough is so called because it is attended with expectoration. In the hooping-cough—*kin-cough*, *perissus*—it is accompanied with a shrill, reiterated hoop; vomiting is also a frequent incident. The last variety is contagious under certain circumstances, which are not very well ascertained. The disease comes on with the usual symptoms of catarrh; the excretion is always viscid, though small in quantity at first. The hoop, or spasmodic spasm, is frequently violent, the face becoming turgid and purple from effusion, and the eyeballs swollen and prominent. The paroxysms at first occur several times during the day, are most violent toward evening, and least so during the night. After the disease has continued some time, they return only in the morning and evening, and toward the end of the disease in the evening only. The violence of the disease varies from the slightest indisposition without feverishness, to the severest spasmodic agitation, attended with high and dangerous fever. Its duration varies from one week to one year, the usual period ranging from three weeks to three months. The pathognomonic sign of the hooping-cough is the noisy inspiration accompanied by a lengthened hoarse. It is generally a disease of children, and the danger is in the chronic state to the age.

**Special Causes.**—The first and second varieties are produced by "colds," or the inhalation of irritating dust, vapors, or other extraneous particles. The third is the result of specific contagion.

**Sequels.**—Bronchial inflammation, consumption, and dropsy in the head, are commonly specified in medical books as among the sequels of all forms of cough, but more especially of the hooping kind. They are more correctly the sequels of the pernicious cough varieties with which children are generally so liberally fed.

**Treatment.**—All forms of idiopathic cough may be very easily managed. Cold water should be freely drunk; the diet must be plain and rather abstemious; and one or two ablutions daily, followed by thorough friction or active exercise, are, in the majority of cases, amply remedial. When the system is inclined to feverishness, the pack, prolonged sufficiently to produce moderate sweating, may be necessary; and when there is an inflammatory state or local soreness of any part of

the chest or lungs, the chest-wrapper should be applied. When the paroxysms of hooping-cough are very severe and exhausting, a warm water emetic is advisable; and in bad cases a tepid half-bath and foot-bath should be added to the daily regimen.

The allopathic treatment of cough affords a melancholy reflection for the intelligent philanthropist. How many little children are poisoned out of their constitutions by the multitudinous cough-medicines of the day! It is true the regular doctors declare against the irregular nostrums, by which children are poisoned through the media of lozenges, medicated candies, and narcotic syrups; but unfortunately these very prescriptions are not a whit less poisonous. The most deadly drugs of the modern modern are the active principles of nearly all the popular cough remedies, and chief among them all are tartar emetic and opium; while henbane, deadly nightshade, poison hemlock, and prussic acid, are in the next highest class of remedies!

**Dyspnea.**—The generic symptoms of this disease—the asphyxiation of Dr. Gould—are: permanent difficulty of breathing, with a sense of weight in the chest. Like cough, dyspnea is symptomatic of an extensive range of diseases.

**Symptoms.**—Idiopathic difficulty of breathing is distinguished into two varieties, chronic, and exacerbating—the *asthma* of authors. In the former the breathing is uniformly short and laborious, and usually accompanied with a cough; in the latter it is deep, startleous, and exhausting, subject to sudden and irregular exacerbations, and relieved by an erect position.

**Diagnosis.**—Dyspnea is distinguished from asthma by the breathing being permanently yet irregularly affected; whereas in asthma the difficulty is recurrent with considerable intervals of perfect ease.

**Special Causes.**—Irritating dust, or pulverulent particles to which stone-layers, glass-cutters, chain-manufacturers, workers upon metals, millers, starch-makers, bakers and poul-workers, weavers, wool-carders, and feather-dressers, etc., are subject; the vapors of mineral acids, metallic exhalations, narcotic vapors, various structural derangements, as corpulency or obesity, hydrath, varices, induratus, adhesions, etc. In some instances, a condition of *emphysema*, or preternatural dilatation of the air-cells of the lungs, resulting from catarrh, has produced both dyspnea and asthma.

**Treatment.**—When the cause is organic, little more can be done than to mitigate the sufferings of the patient by a careful attention to the general health. When the disease depends on functional derangement, the general management is the same as for common cough. A

evacuate drache to the spinal column would be of additional service in most cases by promoting absorption; and where patients have been exposed to poisonous vapors or effluvia, moderate vomiting is desirable. Sauvages relates the case of a female who vomited three times a day, and the evacuations amounted to two thousand, without benefit. By warm bathing and active friction, as as to produce fine perspiration she was cured in ten days.

**ASTHMA.**—This affection is, too, much more frequently a symptomatic than an idiopathic affection. Its pathognomonic characteristics are recurrent and temporary difficulty of breathing, accompanied with a wheezing sound, and sense of constriction in the throat, with cough and expectoration. Asthma distinguishes two varieties, dry, cerebral, or nervous—*asthma sicca*; and humid, or common—*asthma humida*.

**Symptoms.**—In the first variety the attacks are sudden, violent, and of short duration; the sense of constriction is hard, dry, and spasmodic; cough slight, expectoration scanty, and only appearing toward the end of the paroxysm. In the second variety the paroxysm is gradual and protracted; the constriction heavy, labored, and humid; cough violent; the expectoration copious, and at first scanty and mucous, but afterward copious, and affording great relief. In many cases the attack is in the night, and recurs frequently an hour or two after midnight.

**Special Causes.**—Nearly all the causes named in the preceding disease may produce this. It is frequently caused by turgescence, or swelling of the liver or spleen, which impedes the motions of the diaphragm, or interrupts the supply of nervous influence. Strong mental emotions, repressed eruptions, suppressed discharges, such as hemorrhoids, watery, or damp weather, indigestible food, and other detractions, are frequent exciting causes. The predisposition is sometimes occasioned by malformation of the chest, small size of the glottis, dyspepsia, all of which may be conditions of hereditary transmission. Dr. S. Cooper names among the occasional causes, "the influence of light and darkness"—an idea altogether too diffuse.

**Treatment.**—Medical authors admit that asthma is seldom cured dramatically, yet console themselves with the reflection that patients seldom die of the disease, or such, or lest it takes some other form; hence an opportunity is afforded to try any kind of medication that fact or fancy can suggest. It is true that expectorants and narcotics, as squills and antimony, and relaxants and debilitants, as blisters, calomel, opium, saltpetre, and bleeding, generally relieve the paroxysm for the time, at the expense, if frequently repeated, of the total cure of the

digestive powers and nervous system; and that asthma, especially of bilious, have entirely suspended the symptoms of the disease in the banded variety, for a longer or shorter period, without any great injury to the constitution; and thus, I believe, is all that can be said in favor of the popular practice.

The rubbing wet-sheet, pack, and douche, with the chest-wrapper, are the leading processes. Any of the other bathing appliances may be useful or necessary in particular cases, but these are applicable and important in the great majority. When the digestive organs are strongly implicated, the tepid shallow-bath is excellent; and then the abdominal bandage may be substituted for the chest-wrapper. Asthmatic patients can usually take three or four baths daily with advantage. The following combination I have employed successfully as several cases: Dipping-sheet five minutes, followed by the douche three minutes, no rising; at ten to eleven a.m., wet-sheet pack forty-five to sixty minutes, followed by shallow-bath at 72°, ten minutes; at four p.m., sitz-bath at 85°, fifteen to twenty minutes, or shallow foot-bath at 85°, five to ten minutes. Where there is a good degree of visceral heat, a dipping-sheet at bed-time is very serviceable. The bowels must be kept free, by sugar or cast injections, if necessary, and the patient may generally drink six or eight tumblerfuls of water in the forepart of the day. Equally important, and perhaps more so, is the diet. Here we have another opportunity to magnify "the larger error." In all cases the diet should be simple and uncondensed, and in those cases connected with or caused by diseased livers or spleens, or primary dyspepsia, it must be rigidly abstemious; and even this should be composed principally of the articles named in a former part of this work under the head of dry diet, or something similar.

During the paroxysm we should palliate and abbreviate the sufferings of the patient as much as possible, by exposing him freely to the cold air—which is, indeed, what his feelings most intensely desire, and which is always safe while the fit is violent—giving him warm water to drink, even to the extent of vomiting, and applying the warm half or dry-bath; or when the breathing is so labored that he is obliged to sit erect, the hot fomentation to the chest and abdomen.

**LARYNGISMUS—LARYNGISMUS STRIDULUS.**—This complaint is known by the various synonyms of *spasmodic croup*, *spasmodic asthma of children*, *child-crowing*, *crowing respiration*, *expiræ stridula*.

**Symptoms.**—The disease consists essentially of a *spasmodic afforiation* in the larynx, which usually commences at bedtime in the night, attended with a struggle for breath, and a shrill, creaking sound of the



noise, or creaking inspiration, somewhat analogous to *cramp*; the countenance is flushed and swollen, and in the severest cases convulsions occur. Dr. Good names "troublesome cough," as among the pathognomonic symptoms, while Hauser says it is "unattended by cough." The symptom is, however, a merely incidental. This *clausus* sometimes, though rarely, attacks adults.

*Diagnosis*.—It is distinguished from *cramp* by the attack being more sudden, and the symptoms relaxing or intermittent; the freedom of the breathing during the intervals; the absence of fibrile or catarrhal symptoms; and usually the presence of hot swollen gums.

*Special Causes*.—Repelled eruptions, especially of the head, face, or neck; intestinal irritation from worms; indigestible aliment; enlargement of the glands of the neck and chest; cold, and teething are sometimes exciting causes. An inflammation swelling of the mucous folds in the ventricles of the larynx, has been supposed by some writers to be the proximate condition on which the affection depends.

*Treatment*.—The ordinary drug-treatment is, an antispasmodic, a caloric colonic, an opiate antispasmodic, and a Spanish fly emmenagogue—a plan of medication far more dangerous than the disease itself. Several faths of wet cloths well covered with dry to the throat, a tepid bath followed by the dry pack, or by putting the patient in bed, well covered so as to procure perspiration, free warm water-drinking, and a tepid injection if the bowels are not entirely free, is the plan of a safe and successful treatment.

*Events*.—Authors distinguish two varieties of *incubus*, one of which is called *nightmare*, and the other *daymare*. The ancient Anglo-Saxon name for this affection was *elf-squatting*—*elf's inflexure*—so designated because of the imaginary resemblance of the sudden sense of an oppressive and suffocating weight on the chest, to the feeling produced by some hideous monster lying on the chest.

*Symptoms*.—Both varieties are attended with sighing, with a certain difficulty of breathing, intercepted utterances, or entire temporary inability to speak or move, with a sensation of some external weight pressing heavily on the chest, from which the patient awakens affrighted. In the *daymare*, which occurs during wakefulness, the sense of pressure is severe, and is extended over the abdomen; the respiration is frequent, laborious, and restricted; the eyes are fixed; the sighing is deep and violent; and the intellect is undisturbed. The *nightmare* is the same recurrent form; it occurs during sleep, which is interrupted with a violent struggle and terror; the pressure on the chest seems to be that of some hideous monster or phantom; it is usually preceded

by a perilous or troubled dream, during which the patient imagines some position of danger, as a high building, scowls, or precipice, from which he is about to fall; or imagines some horrid accident or calamity, or murder or suicide, or conceives an attack from some enemy, beg, spectre, ghoul, or goblin, whose grasp he is incapable of eluding.

*Special Causes.*—It is generally occasioned by excessive fatigue, exhaustion from want of sleep, an overheated stomach, or some indigestible viand in the alimentary canal. Dyspepsia, and nervous females are very liable to it. All persons who eat heavy or late suppers are in a state of predisposition.

*Treatment.*—Shaking, agitating, or awakening the patient will immediately arrest the paroxysm, which, by the way, seldom lasts a full minute. The prescriptive management is found in a light evening meal, a hard bed, and sleeping on raised high pillows, with the body a little inclined on the side. The curative plan may be found in a daily bath, plain quality and moderate quantity of food, and a free daily action of the bowels, which should be promoted by injections if necessary.

*Prognosis.*—Although this disease is attended with more or less suffocation and spasmodic respiratory, it is rarely cured by; or rather is in fact, an inflammatory affection of the mucous membrane of the bronchial vesicles. It is frequently the prescriptive condition of consumption; and not infrequently the treatment pursued by the medical man, rapidly hastens on the fatal termination, by developing tubercles in the lungs. It is comparatively a modern disease, and is alarmingly on the increase, owing to the luxurious and overeating habits of fashionable society.

Authors distinguish the disease into the acute and the chronic forms; but all the former is not essentially different from a severe catarrh, or mild pneumonia, either in its symptoms, progress, or termination; it is only what is usually known as chronic bronchitis that concerns us here. Irritation and inflammatory affections of the mucous membrane of the throat, larynx, larynx, pharynx, and adjacent parts, are often confounded with bronchitis proper; and are described as and confounded with this disease under the various terms of *pulmonic erysipelas*, *pneumia catarrh*, *bronchial angina*, *affection catarrh*, *catarrhal bronchitis*, *bronchial peripneumonia*, *pulmonary catarrh*, *catarrhal fever*, *acute mucous catarrh*, *acute catarrhal catarrh*, &c.

*Symptoms.*—The disease commences with more or less cough, irritation about the throat, sense of tightness in the chest, and shortness of breath, which do not, for a considerable time, attract much attention. The first difficulty which is generally noticed as of importance,

is a sense of naginess, with frequent attempts to clear the throat, accompanied with or followed by tickling of the larynx, evoking a dry, hard cough; these are, after a longer or shorter period, succeeded by some degree of hoarseness of voice, with a sense of tightness across the chest, and sometimes a slight pain or diffused soreness upon coughing, or inflating the lungs fully by a prolonged and deep inspiration. As the disease progresses dyspnoea comes on, which is increased by exertion, coughing, or exposure to cold, and some degree of expectoration occurs, at first scanty, then more copious and of a glairy appearance, like the white of an egg; and in still more advanced stages it becomes mucopurulent or purulent and sometimes tinged with blood. In some cases all of the symptoms are abated every summer and exacerbated every winter for several years in succession. The constitutional disturbance is marked by lassitude, pains in the limbs and back, slight shiverings or chills, frequent and feeble pulse, feverishness after dinner or toward evening, and evidently slight anemia. In some cases the principal local symptoms are, hoarseness or loss of voice, a hard, dry cough, with a sense of soreness, tightness, dryness, and heat under the sternum; in most cases the cough is always excited by a full inspiration; in a few instances the breathing is rattling or wheezing, owing to the air struggling through the viscid mucous accumulations in the bronchi; and sometimes, though rarely, the voice is scarcely altered, while the breathing, on the slightest disturbing cause, becomes painfully spasmodic, in consequence of the tenacious, glairy secretion becoming concreted upon the living membrane of the bronchial tubes.

*Special Causes.*—All the causes of consumption, say, under a modified set of circumstances, produce this form of pulmonary disease. But there is no doubt that the increasing quantity of tea, coffee, and tobacco consumed by our people is a special cause of the increasing prevalence of this disease among us.

*Treatment.*—Nearly all that has been said is relative to the management for consumptives will apply here; and so that the reader is relieved. A majority of the patients come to us bundled up in flannels, extra silk, double stockings, India rubbers, and other contrivances for keeping off the cold to which these very contrivances—usually per advice of the doctor—have rendered them extremely susceptible. All these means that expurification of dress must be removed by degrees, as the patient's skin becomes accustomed to the contact of cold air and water. The best processes in connection with are generally the sponge or towel-bath, or rubbing-sheet, accompanied with active though not severe friction. After a few days the chest-warmer should be applied, and all the derivative appliances—balf, hip and foot-baths—employed,

so frequently and so cold as the patient can bear without disagreeable or prolonged chilliness. Prevention is necessary also, to avoid greatly disturbing the circulation or respiration, by too great a shock or too cold an impression. When the general heat of the surface is equal to, or above the normal standard, the pack should be repeated daily, or tri-weekly. Those patients who are particularly troubled with short breath, and are easily fatigued by exercise, should walk regularly and persistently in the open air, within the limits of much fatigue at first, and gradually increase the distance.

Acute bronchitis is a dangerous and most obstinate disease, and patients ought to understand before commencing a course of warm-treatment, that time and patience are important considerations. I have known a few cases recover in ten or twelve weeks, but a majority require careful treatment from six to twelve months, while many cases cannot be thoroughly cured in less time than from one to two years. This may seem like a long and discouraging process; but if the sufferer can draw any consolation from the fact that no other method ever cures at all, he will find abundant evidence of this fact if he will look over the long catalogue of remedies which are put forward in medical books; a list whose formidable length is alone conclusive that no real confidence is felt in any one of its ingredients, say in all together.

Perhaps a page or two of this work could not be more instructively occupied than in presenting a fair sample of the interminably experimental nature of drug-treatment—as few soporifics have ever dreamed of the confusion which pervades medical books on the subject of prescribing remedies. As an illustration, therefore, I will copy in full, from one standard work—*Copland's Medical Dictionary*—all that signifies the remedies and curative processes, recommended for the treatment of the different states, forms, stages, and complications of the disease under consideration. These may be conveniently collated under the heads of classes, processes, forms and variations, indications, drugs and preparations, and regional directions.

1. *Classes of Medicines*, which affect: emetics, purgatives, expectorants, laxatives, tonics, stimulants, anodynes, soporifics, anæsthetics, sedatives, resuscitants, emmenagogues, hysterics, antispasmodics, nervines, counter-irritants, diaphoretics, blisters, rubefacients, vesicants, thapsia, stramonium, nuxvomica, colicifera, emollient, anodyne, and narcotic.

2. *Processes of Medication*.—General bleeding by the lancet; local bleeding by leeches; repeated cupping by cupping; leeching the gums (in Children); blisters applied to various parts; burning the skin by hot caustics; cauterizing the skin by acids, nitrate; paralyzing the skin by treatment of tartar emetic; blisters applied over the stomach; leeches applied behind the ears; leeches applied below the waist; cupping on the top of the back; issues, issues, the venous, cupping the body with warm water and vinegar; sponging with a solution of stramonium leaf; anodyne poultice; fomenting





very easy cases. This practice may be safe in purely local affections of the throat, but it is certainly hazardous when the lungs are also implicated.

**STERNALGIA.—STIFFENESS BREAST-PAIN.**—This affection is described by various writers under the varied names of *angina pectoris*, *tyrocyte angina*, *angina cordis*, *angina*, *an dolens*, *angina*, and *sternocorditis*.

**Symptoms.**—The disease is characterized by a violent pain about the sternum, or breast-bone, extending toward the arms, attended with anxiety, difficulty of breathing, and a sense of suffocation. Authors describe two varieties: acute, in which the attack comes on suddenly during exercise, with a tendency to faint, and which is relieved by rest; and chronic, in which the paroxysm is less violent, of longer duration, recurring frequently, and excited by slight causes, attended with palpitation, and not relieved by rest.

**Special Causes.**—Exhaustion, gouty, rheumatic, and debilitated persons are especially the subjects of its attacks; hence the great causes of debility and nervous exhaustion may be regarded as its predisposing influences, and, indeed, it is always symptomatic of some general morbid condition. Lavoisier regarded *angina pectoris* as a species of neuralgia of the heart; and some authors have imputed it to occlusion of the coronary arteries of the heart—a supposition poorly founded.

**Treatment.**—The paroxysm can be relieved by a warm water eristic, a dripping-sweat as described, or the poultice head-bath. The cure depends on a well-regulated diet, and a daily cold-bath.

**Pleuralgia.—Pleurisy.**—Both of these terms import pain in the side, and are employed to denote a poignant pain in the side, with difficulty of breathing, which difficulty is owing to an acute distress or ache produced by every attempt to inflate the lungs. It is distinguished from pleurisy or pneumonia by being unattended with fever or inflammatory symptoms.

**Symptoms.**—In the acute or severe form, which is called *stick in the side*, the pain is sudden and temporary, supervening on exercise, and being relieved by repose. In the chronic form the pain is permanent, aggravated by posture, and there is inability of lying on the side affected.

**Special Causes.**—The first variety is generally occasioned by hard running, jumping, tilting, or other violent exertions, but is sometimes symptomatic of *neuritis*, *hysteria*, *hypochondriasis*, &c. The second

variety is in some cases symptomatic of structural derangements, as aneurisms, malformations, adhesions, or other organic lesions; more commonly it is caused by plethora, transferred gonorrhea, rheumatism, chronic inflammation of the liver or spleen; and more frequently still it is produced by the barbarous custom of tying the chest, and the mischievous habit of leaning against a hard desk, or bending the trunk of the body forward while writing, reading, sitting, sewing, etc.

Treatment.—The attack gradually subsides on moderating the exercise, or by resting. It may be promptly relieved by a handkerchief, or tight bandage, the hot fomentation, or warm drinks. In the chronic form we must have regard to the producing cause, or the primary morbid. The abdominal grade is, however, always in order.

#### HYDROPHOBIA—CANINE MADNESS—RABIES—ENYALIA LITTA—

Hydrophobia literally means *water-fear*, a symptom which generally, though not uniformly, attends the disease, and it, in some instances, found in other diseases.

Symptoms.—The disease generally commences with pain, tenderness, or some unusual sensation in the throat, or lower part, followed by pains darting along the course of the nerves. But in some few cases these local symptoms do not appear. The first constitutional symptoms are, wandering pains in different parts of the body; stiffness of the neck and throat; tenderness and irritability; the patient is nervous or depressed; he is observed to sigh deeply and frequently; a peculiar feature among the early symptoms is a sudden and deep inspiration with which the patient is frequently affected. He is also severely agitated by the impression of cold air, the glare of a sun, the noise of a pump, the sound of water, etc. As the disease progresses, its true nature becomes revealed by the difficulty of swallowing liquids, which increases until the sight or sound of water causes him to start with dread and horror; the attempt at deglutition is hurried, accompanied with shivering, and followed by convulsions. The countenance now expresses indescribable alarm, anxiety, and suspicion; the eyelashes are contracted; the eyes are wild, staring, and glassy; there are again thirst, hot and dry skin, painful efforts to vomit, and intolerance to light and sound. The sufferer spits out the frothy mucus and mixed saliva between his closed teeth, with vehement shakings, which occasion a singular sound; talks in a hoarse, imperious, authoritative tone, and often screams violently. In some instances the intellect seems unaffected to the last, but in other cases he is wildly delirious, and talks incoherently and incoherently. Towards the end, convulsions become more frequent, and the patient dies asphyxiated or exhausted.

The duration of the disease is usually two or three days; in some rare instances it has continued eight or nine days. The symptoms also manifest considerable diversity. Sometimes the wounded part exhibits nothing more than a slight swelling, and sometimes the cicatrix opens afresh, and issues forth a little cuboid virus. In some cases the patient is furiously mad, bites himself and others, also the bystanders, and whatever else is within reach.

*Special Causes.*—This disease is usually communicated by the bite of a rabid animal; but it may originate spontaneously. The nature and origin of the virus, or infecting principle, are unknown. But that putrid flesh and decomposing cold, or which so many dogs, cats, hogs, etc., are fed, are the chief producing causes, is attested by the frequency of its recurrence in these animals. But this cause alone does not seem capable of generating the poison. Some excitement, or feverish heat of the blood, must co-operate. It is well known that violent passion here, in the human being, and in various domestic animals, changed the saliva in a moment to an absolute virus, which has communicated disease and death to others. Thus the bite of an enraged man, boar, hog, goose, duck, and hen, has been known to impart a doubtful infection. And when a furious exercise of the passions, or an inflammatory state of the blood by violent exercise, co-operates with putrescent food, the peculiar universal transformation of matter may take place, which, analogous to a ferment, as I have previously had occasion to instance, may produce in the saliva a virus capable of propagating itself under favorable circumstances. This view is corroborated by all its historical and phenomenal data. Dogs, cats, and hogs are most exposed to these combined influences, and these animals are most subject to the disease, and in the order named. Wolves and bears have been noticed as being frequently affected than the herbivores—boars, oxen, cows, sheep, goats, etc., and the manner in which they are exercised and fed, will strengthen our position.

*Prognosis.*—Hæuser pronounced judgment in the following words:—"Fatal. The disease has hitherto defied all remedies." Some few cases, however, have recovered under different and even opposite plans of treatment, owing probably to the existing energies of a good constitution. Water-treatment has apparently succeeded in two or three instances.

*Latent Period.*—The time which elapses between the bite of the rabid animal and the development of the symptoms, is usually from twenty to forty days; but it may be less than a week, and has been known to extend to three and four years.

*Treatment.*—The indications are—1. To regulate the distribution of



severe influence; 2. To derange the system of its virus. In the early stages the cold treatment may be applied in almost any form, provided it be powerful enough to produce a decided sedative influence upon the whole system, followed by the wet-sheet or dry blanket covering, to promote perspiration. Probably the preferable processes are the douche and rubbing-sheet, followed by the wet-sheet pack when the temperature of the body is nearly at or above the normal standard, and by the dry pack when the circulation is low, and there is an inclination to chilliness. These processes may be repeated and alternated as long as the spasmodic condition of the throat exists. Meanwhile, if the patient cannot swallow sips of cold water, he may perhaps be able to chew or swallow bits of ice; and he may be indulged to the extent of his inclination. Very cold compresses or powdered ice should also be applied to the throat. Very cold water enemas I should decidedly recommend, although I am not aware that they have ever been tried. Hooper tells us that the irritation of the throat has never been removed except by the use of ice taken liberally.

Procaccia has repeatedly cured rabid dogs by dosing them perseveringly with cold water. The following case, recorded by Dr. Todd, at King's College Hospital, is instructive: The patient was a boy seven years of age, laboring under the worst form of the malady, and refusing, with horror and impatience, every thing offered him, of either a solid or liquid form. After having taken twenty drop doses of prussic acid without any effect on the spasms, he was offered a fragment of rough ice, which he seized and swallowed with avidity. Fresh pieces were constantly put into his mouth, which he seized and crunched between his teeth with remarkable eagerness, swallowing them with perfect ease. In half an hour he had taken a pound and a half of rough ice; and at the same time a bladder containing a mixture of roughly-powdered ice and common salt was applied the whole length of the spine and around the throat. Under this treatment all the symptoms referable to the throat and chest, with the exception of occasional lookings, passed away, and nothing remained but extreme restlessness, violent excitement, and incoherence. In this condition, and in Dr. Todd's absence, the cold douche was unfortunately applied by the directions of some other physician, "but the system," says the physician who prescribed the douches, "did not rally from the shock."

Dr. Guy, author of a work on Medical Jurisprudence, remarks, in relation to the above case: "I am inclined to attribute more benefit to the internal than to the external use of ice in this case; but the joint administration seems to be the most rational treatment yet recommended."

There was certainly a grave mistake in the application of the cold douche under the circumstances. On the first attack it would have been proper, but when the violent symptoms are subdued by cold treatment, and the patient is in a state of partial collapse, a very cold shock is entirely out of place. But there is another very important consideration. The patient had taken enormous quantities of a powerful narcotic, and, although he did not manifest any symptoms of narcosis while the convulsive paroxysms continued, yet the deadly drug was in him, and must have so paralyzed the nervous system that it could not possibly react or rally against such a shock, which, in an earlier stage, or without the prismic web, might have been harmless and salutary. Patients with no diseases, and under no circumstances, bear cold shocks as well while under the influence of narcotics; a fact I have repeatedly known to be verified in actual practice. The history before us shows also the danger of occupying the system, and prostrating its energies by a drug-poison, while we are making impressions on the system by another and very different set of agencies. They do not work well together.

The cold water-treatment was in vogue for hydrophobia even in the days of Celsus; and Dr. Good, who, after an elaborate examination of all the methods of treatment known to, or rather practiced by modern physicians, confesses the utter inability of all of them, adverts in the case of a patient who was cured by water as though it was a wonderful escape from death by drowning. "Thus," says Dr. Good, "H. Hall relates the case of a young woman, twenty years of age, who, laboring under symptoms of hydrophobia, was plunged into a tub of water with a bucket of salt dissolved in it, and was harrowed with repeated dippings until she became insensible, and was at the point of death, when she was still left in the tub, sitting against its sides. In this state, we are told, she was at length fortunate enough to recover her senses, when, much to her own astonishment, as well as to that of the bystanders, she found herself capable of looking in the water, and even of drinking it without choking."

The preventive treatment after the bite, as in all cases of poisoned wounds, is by excision of the part, if it can be done instantaneously; the ligature; cauterization; section; and perhaps refrigeration. Probably the immediate application of a ligature above the bitten part, and the employment of a powerful styptic-plaster over the wound, would arrest the process of absorption for an hour or two, after which excision or amputation may be resorted to, as best. In all cases, it would be a prudent measure, after the wound has been attended to, to undergo a thorough course of mercuric packings, with the view of clearing

the body as much as possible from all morbid secretions or putrescent accumulations upon which the virus could, as it were, feed and propagate itself, should any portion of it happen to pass into the circulation.

**ANOREXIA.**—The affection called *anorexia, pulebromia*, and by some *apoplexia*, though improperly, is a failure or cessation of pulsation for a longer or shorter period, sometimes affecting only particular parts of the system, and sometimes extending over the whole body, after accompanied with paleness, chilliness, pain in the epigastrium, and a sense of spasmodic constriction in the respiratory muscles.

It is often precursive of palsy and apoplexy, sometimes symptomatic of organic derangement; but is sometimes produced by functional derangement of the stomach, liver, or spleen, or some obstruction to the equable radiation of the nervous energy. Some persons have possessed the ability to produce, by voluntary effort, a universal deficiency of pulsation, and of simulating natural death.

**TROUSSEAU.**—The paroxysm may be relieved by thorough friction with cold wet cloths, followed by dry flannel or the dry hand; the cure, so far as practicable, depends on a strict compliance with all the laws of hygiene.

**TETANUS.**—Several forms in which this disease presents itself, have been designated as varieties by many authors; as *emphrenotonus*, when the body is bent rigidly forward; *pleurothymus*, when it is rigidly bent laterally; *epithotonus*, when rigidly bent backward; *erectus*, when rigidly erect, &c.

**Symptoms.**—The character of the disease is a permanent and rigid contraction of many or of all the voluntary muscles, with immobility of the body, and difficulty of breathing. Generally the extremities are firmly extended, the abdominal muscles strongly retracted, the eyes fixed, the forehead drawn up into frowns, and the whole countenance shockingly distorted; the violent contractions are attended with excruciating pain; the pulse is accelerated; the respiration is very laborious, or almost suspended; and the skin is covered with a profuse perspiration. The symptoms frequently remit partially, but are renewed with aggravated torture by the slightest cause, as the least motion of the patient or slightest touch of an attendant. Sometimes the tongue is thrust spasmodically out of the mouth, and the teeth, spasmodically snapping upon it, wound it severely, unless prevented by some interposing substance. In fatal cases death is preceded by frothy or bloody mucus at the mouth, small and imperceptible pulse, and delirium.

**Special Causes.**—Sudden exposure to damp and cold when the body is overheated; wounds, punctures, lacerations, or other local irritations of various kind; the bad air of crowded hospitals; extreme terror, or violent passion; sympathy; long exposure to a very hot sun; various narcotics, as strychnine, or can venenæ; morose galvanic excitement. However rare, among the predisposing causes, "the male sex, robust and vigorous constitutions, warm climates, the period of infancy." It is a singular reflection on nature, or on nature's God, that one cannot be a male, nor have a good constitution, nor live in a warm climate, nor exist during infancy, without being, from either of these circumstances, predisposed to tetanus.

**Duration.**—In fatal cases the ordinary duration is from four to eight days. Favorable cases linger from one to eight or ten weeks.

**Prognosis.**—When arising from wounds, the disease has in most cases proved fatal, and it is exceedingly dangerous when existing from any cause.

**Treatment.**—Water-Cure has not yet been fairly tested in this formidable affection, but the principle upon which the treatment should be regulated, seems very clear. The single indication is to abate the irritation; and to do this the leading measure must be calculated to produce and maintain a relaxed or sedative effect. Heroes, and even wounded soldiers, have been cured by an accidental exposure to a long and drenching rain; from which fact we may derive a profitable lesson. As the patient is excessively susceptible to impressions of all kinds it would not answer to weaken him with very warm water, nor shock him with very cold. The wet-sheet envelop—and two or three thicknesses, are better than one, especially in the early stage, if the patient has taken little or no narcotic or depleting remedies—offers the best resource. As soon as the patient is comfortably warm, a part of the bedding should be removed or the bed-clothes loosened, so as to keep up a comfortable glow and maintain a moist state of skin for a long time, even hours together. When the patient becomes too warm, or the wrapping-sheet too dry, it should be wet with cold or tepid water, 45° to 75°, without being removed, so that the patient may continue at perfect rest. There can be no danger in continuing this treatment for days, provided the temperature of the patient is carefully kept near the natural standard. When caused by a wound, the injured part should be covered with several folds of cold wet cloth—as cold as can be borne, without increasing the pain, which should be frequently changed. If able to swallow, the patient should drink water freely, and as much cold water should be occasionally thrown into the bowels by a pump-syringe as they can conveniently receive.



**LOCKED-JAW.—TETANUS.**—This disease differs from the former in the spastic rigidity of the muscles being chiefly confined to the lower jaw; from which circumstance many authors regard it as a more form or variety of tetanus. It has also been designated as traumatic, when arising from wounds, surgical operations, or other local injuries; and catarrhal, when produced by colds. Sometimes it attacks infants soon after birth, constituting the *trismus neonatorum* of Dr. Gould.

**Symptoms.**—Sometimes the attack is sudden, but usually the symptoms come on gradually; there is more or less of an uneasy sensation at the root of the tongue, and some degree of difficulty of swallowing. The spasm sometimes extends to the muscles of the chest or back; the breathing is nasal; articulation is interrupted and slow; the muscles of the nose, lips, mouth, and of the whole face are fixed and distorted, and the jaw bone is often so firmly set as to break before the muscles will yield to mechanical force.

**Special Causes.**—Mechanical injuries, especially the wounding of arteries in bleeding and surgical operations; gas-shot wounds, punctured wounds by nails, splinters, pieces of glass; extreme vicissitudes of temperature, &c. Obstructed bowels is a frequent cause of the infantile variety.

**Treatment.**—The general plan of medication is similar to that of the former variety. Derivative baths may be here employed, in addition, with advantage, of which the tepid shallow-bath, accompanied with active hand-rubbing, is the best. The bowels should be freely acted by warm water injection.

**CRAMP.**—This affection is often symptomatic, as in various species of colic, cholera, and other diseases. Pregnant women, whose labors are too sedentary, or whose diet is too restricted, are often troubled with fugitive cramps about the hips or in the muscles of the lower extremities.

**Symptoms.**—The disease consists of a sudden contraction and coarctation of one or more muscles, attended with extreme but temporary pain. The stomach, neck, calves of the legs, and toes, are the parts most frequently attacked. When the hollow viscera or tendinous muscles are affected, the pain is agonizing, a violent perspiration usually breaks out, and the part feels as though it were puckered and drawn to a point. When the stomach is attacked, the breathing is short and distressing.

**Special Causes.**—Sudden exposure to cold or damp when the body is relaxed; saturation of the stomach or bowels; long-continued pressure; overstretching the muscles. Acc. bile is a frequent cause of

cramp in the stomach, and acid drugs are a common cause of acid belch; hence we meet with the most obstinate cases among obstinate drug-takers.

**Treatment.**—The paroxysm can be relieved in a variety of ways. The warm drinks, followed by the cold dash; hot fomentations; the warm hip-bath and foot-bath are applicable to cramp in the stomach; when seated in the external muscles or extremities, the hot or cold dash will each relieve it; it can also be speedily overcome by forcibly pressing the affected muscle against a hard, resisting body, as, for example, the ball of the toe, or the foot against the floor, foot-board, or upon the other foot. The cramping diathesis may be entirely combated by daily bathing, plain, unseasoned food, and regular and active exercise.

**MUSCULAR DYSTONIA OF THE SPINE.**—**SPINAL DEGENERATION.**—“Spinal disease,” “spinal weakness,” “spinal irritation,” etc., are among the rapidly-increasing diseases which tell of our exerting habits and consequent physiological degeneracy. Spinal disorders may result from organic affections—caused by injuries—of the vertebral column, or from osseous malformations, as in rickets and scrofula; but the great majority owe their existence to simple muscular debility.

There is no part of the great field of “medical error” in which a more blundering pathology, a more unfortunate diagnosis, and a more erroneous practice prevail than that relating to spinal complaints. All through the many weakly families abroad, whose backs have been lacerated, burned, starved, encased, leached, cupped, scathed, punctured, and otherwise tortured, with the view of curing—irritating a spinal disease, when in fact they have had no spinal disease at all! Any form of indigestion, any morbid condition of the liver, kidneys, and any form of overexertion, may produce a sympathetic irritation of some portion of the spinal column; and in many of these diseases of the abdominal and pelvic viscera, a tenderness will be found by pressing firmly on that part of the spine from which the nerves are sent off to the organ or part really diseased. This sympathetic tenderness the doctor mistakes for an idiopathic disease, and plays his destructive accordingly. Again, when the whole body is debilitated by too hard bed sheets, close rooms, sedentary habits, etc., the whole muscular system is necessarily relaxed; it has not sufficient firmness and elasticity to sustain the mass of the body erect, and performs its varied duties with ease and energy; hence, like the mass of a ship, when the ropes are weakened or destroyed, the vertebral column bends, leans, or tips backward, forward, or to one side—namely the latter; and again the med-

kind man, again misapprehending the state of affairs, instead of attending to the health in general, and strengthening the weak muscles in particular, administers his internal drugs and dietetics, and puts on his external fixations and plasters, or condensers to give support to the falling frame by binding it up with a set of awkward and complicated machinery. Thousands of females have had real diseases inflicted upon them by the physician's attempts to cure the imaginary one.

The "axis of the back" is the center of the whole muscular system; it is the strong or weak point with every person, and no less than three hundred distinct muscles are concerned in the complicated movements of the vertebral column; hence it is not difficult to understand how a relaxed or weakly condition of the genital system should be especially manifested in a muscular distortion of the spine.

*Spinal Curves.*—Under this head I am most happy to quote the following sensible observations from a standard algebraic book, more especially as I have so frequent occasion to dissent from the sense expressed in the works of this school:

"In rustic life we have health and vigor, and a pretty free use of the limbs and the muscles, because all are left to the impulse of the moment to be exercised without restraint. The country girl runs when she is tired, and in whatever position she chooses or feels easiest, and walks, hops, or runs, as her fancy may direct, when she has recovered herself; she bends her body and erects it as she lists, and the thorax and extensive muscles are called into equal and harmonious play. But instead of this, let the child of the opulent be compelled to sit both upright as a high, narrow chair with a straight back, that hardly allows of any flexion to the sitting muscles, or of any recreation to the spine; and let the whole of her exercise be, instead of irregular play and frolic play, be limited to the slow and measured march of Melancholy in the *Pennons of Mifflin* :

— "With every step and bounding gait."

to be regularly performed for an hour or two every day, and to constitute the whole of her corporeal relaxation from month to month, girded moreover, all the while, with the paraphernalia of hoops, bodices, stays, and a spiked collar, and there can be no doubt that the young heiress will exhibit a stupa as firm and a demure as elegant as fashion can exorcise into, but at the heavy expense of a languor and relaxation of fiber that no stays or girds can compensate, and no improvement in figure can come from."

*Dipsosia.*—In organic or structural derangements, this distortion is even worse outward, forming a sharp projection of the loaves, called

angular curvature; in contradistinction to this disease before us, which is usually termed the lateral curvature; and this may be right or left as the vertebrae on the right or left side of the body are more debilitated from peculiar postural habits, ordinary bodily postures, &c. The muscles of the back are more or less emaciated; the soreness or tenderness upon pressure is a very variable symptom; it may be constant or occasional, severe or slight, or entirely absent. Paralysis of the lower extremities is a common symptom of the organic or true spinal disease, especially when the displaced vertebrae press severely on the spinal cord, and when any portion of the cord or medulla oblongata is affected with a softening, inflammation, or other abnormal transformation. Some authors have regarded the lateral or muscular curvature as an over-action of some of the muscles of one side; but the exact contrary—want of action—is invariably the fact. Some authors regard the muscular debility as the predisposing cause of the bony distortion; while others regard the disease of the bones and a relaxation of their ligaments as the producing cause of the muscular depressions. Neither hypothesis is correct; for both affections, as already intimated, commence, progress, and terminate independently of each other; one being strictly organic, and primarily affecting the bones; the other purely functional, and primarily seated in the muscles. Sometimes the distortion is double, forming a sigmoid flexure; and the curvature is said to be more frequently on the right side than on the left, probably owing to the more frequent extension of the right hand, the body being thrown toward the left to preserve the central point of gravitation.

Treatment.—First of all in importance is the general regimen. All superfluous clothing must be thrown off; silks and furs are next the skin must be eschewed; all artificial support must be withdrawn, and every thing about the body or dress which interrupts in the least free and varied motion is to be removed. Exercise in the open air should be frequently taken, and such gymnastics as call the muscles more especially *dehiscunt* into action, should be indulged with moderation, and regularly persisted in. The bed should be easy but not heating. A good hair mattress answers very well, and a bed well filled with new cut straw is still better; the patient, during sleep, should recline in nearly on the horizontal posture as is consistent with quiet rest, but not put on an uncomfortable stretch, as some authors have advised. The dietetic plan should consist, to a large extent, of plain, unadorned, solid and dry articles and preparations, as brown bread, with baked apples; wheaten grist and sugar, with uncooked apples; wheat meal or Indian cakes, with milk; roasted potatoes and milk, with dry crusts of good



sweet bread; Graham crackers, with ordinary vegetables and fruits, etc. Cold water should be drunk in the forepart of the day, especially soon after rising, as freely as the stomach will bear without decided discomfort; and if the bowels are in any degree torpid, a daily injection should be employed.

The bathing part of the treatment should be as strictly tonic as possible. The dripping-bath, followed by active and prolonged rubbing with the dry hand; or the tepid shallow-bath, followed by the full douche, and this, succeeded by hard friction, should be employed daily when practicable, and the towel-bath substituted when both are impracticable. The douches to the whole surface of the back may be employed once or twice daily. The stream should be of moderate force, and applied from two to five minutes. The hip-bath will also be highly serviceable, by counteracting the relaxed muscles at the very point of their greatest relaxation. The air-bath is also worth recommending in this place, and its advantage would be greatly enhanced by manipulating or kneading the whole back, and especially in the immediate vicinity of the needed curvature.

I say add, in conclusion, that Dr. Ferriell, who once wrote an elaborate treatise on this complaint, treated his medication almost exclusively to burned sponge and the carbonate of soda, from which treatment he is said to have experienced remarkable success; but it is worthy of note that his hygienic auxiliaries were, a constant posture, *dissemining, friction, pure air, occasional exercise, and careful attention to diet*. Part of success his hygiene effected the cure, while the drugs were useless or nearly insignificant.

**MUSCULAR STIFF JOINT.**—This affection, which consists of a permanent and rigid contraction of one or more articular muscles or their tendons, may arise from spasmodic contraction or from simple atony; the former kind often results from rheumatism, and the latter from long confinement or neglect of use; colds, strains, and inflammations occasionally produce it. The douches, compresses, active and prolonged friction with soft flannel or silk, or, better still, the bare warm hand, are the "*methodus medendi*."

**WRY NECK.**—A permanent contraction of the flexor muscles of one side of the neck, or a loss of the balance of action between the flexor and extensor, by which the head is drawn obliquely to the right or left, may be occasioned by a natural disparity in the length of the opposite muscles, and only curable, if at all, by a surgical operation; or by a spasmodic fixation of one or more muscles on the contracted side;

or from debility of the muscles on the opposite or yielding side; or from the two last conditions combined. The first variety is generally congenital, but sometimes results from burns and other injuries; colds and strains are the usual causes of the last three varieties, the curative method for which is the same as for the preceding disease.

**Hiccough—Hæmter—Siccusatus.**—The disease before us, and all others arranged under the head of *chronic spasm*, are frequently symptomatic affections. In rare instances, however, they seem to occur idiopathically; that is to say, without any other apparent and well-defined primary cause to which they can be ascribed.

**Symptoms.**—Hiccough is defined, a convulsive spasm of the respiratory muscles, with spasmodic inspiration, repeated at short intervals. The spasmodic action, as in the case of vomiting, is principally made by the diaphragm and external abdominal muscles.

**Special Causes.**—Bile in the stomach, acidity, distension, indigestible food, an overworked stomach, external pressure, nervous, interesting doubts.

**Treatment.**—A draught of cold water, the foot-bath, cold compresses to the stomach. When combined by acid bile, over-fullness of the stomach, or alcoholic liquors, warm water-drinking, the cold abdominal bandage, and the cold injection.

When the spasmodic action appears to be merely irritative, it can be checked at once by holding the breath as long as possible, and fixing the mind intently on some object; violent sneezing, sudden fright, or almost any sudden and strong emotion of mind, will generally arrest it. Baron Dupuytren once cured an obstinate case by applying a hot iron to the region of the diaphragm; but whether the actual cautery or the actual fright actually cured the patient, medical gentlemen may differ; my opinion is in favor of the fright.

**SNEEZING—CLOSERE STRENTATIO.**—Sneezing is a convulsive motion of the respiratory muscles, by which air is driven violently and suddenly through the nostrils, producing a sonorous expiration. In the natural order of things the act is intended to eject from the nasal membrane of the nostrils any irritant or offensive material which effects a lodgment there. Snuff-takers frequently so abstract and paralyze the nervous sensibility, that it is impossible to excite sneezing by all the pungent stimuli; the nose is able to receive, while the undepraved instinct will raise a violent commotion against the smallest particle of obnoxious dust or septic vapour.

**Special Causes.**—Pungent dust, vapors, gases, or other local irritants.

hairs; increased mucous and serous secretions, as in mucus and pusules; washed sensibility of the Schneiderian membrane from acid bile, and morbid secretions of the urinary canal.

**Treatment.**—Swallow cool or cold water frequently, taking care to draw the fluid into the nostril by means of a moderate but prolonged aspiration, rather than by a forcible, jerking motion; in severe cases—decatative baths—the hip and foot—are useful; and in some cases of dyspeptic sweating, the whole face requires “packing.” I once had an insatiable dyspeptic under treatment, who was afflicted with an eruptive, erythematous, or “cankerous” condition of the mouth, throat, stomach, and bowels; and this occasioned such an excessively irritable state of the mucous membrane of the nose that the most trivial exciting causes would excite violent and painful attacks of sneezing; these would continue, unless attended to, for hours, and until the whole face was grossly swollen, the eyes injected and painful, and the sense of itching and irritation intensely annoying and intolerably distressing. The sneezing fit was several times stopped by placing several folds of wet cloths over the whole face, leaving a small aperture for breathing purposes, and covering these with dry flannel, so as to produce what has been called the “packing” effect of the wet compress.

**PALPITATION.**—A salutatory vibrative motion may be limited to the heart alone, or the trunks of some of the larger arteries alone, or affect their ramifications in the viscera, constituting palpitation of the heart, of the arteries, and complicated or visceral palpitation.

**Symptoms.**—Palpitation of the heart is a vibratory and irregular motion, sometimes sharp and strong, and then called *thrilling of the heart*, and sometimes soft and feeble, when it is termed *fluttering of the heart*. In some instances the force of the heart's contraction has been so great as to shake the bed, be heard across the room, rupture the ventricles, and even fracture the ribs. In very nervous or irritable persons the palpitation often shoots from one artery to another, and sometimes a preternatural pulsation pervades every part of the body, the morbid sensibility being so acute that the patient not only feels the external thrilling, but actually hears it. The temporal and carotid arteries are particularly subject to a migratory thrilling, which may be synchronous, or alternating with the beating of the heart. In dyspeptics, the descending aorta is often the seat of a most disagreeable thrilling, not infrequently mistaken for neuritis.

**Special Causes.**—Palpitation is always symptomatic of some organic or functional difficulty, commonly the latter. All visceral obstructions, and every form of indigestion, are liable to be attended with this symp-

ness. The use of tobacco, strong coffee, green tea, or ardent spirits very frequently produces the most and most obstinate attacks. Strong mental emotions, if frequently repeated, or continuous mental exertions of any kind, tend to excite a labious, disorderly action of the heart and arteries. Probably congestion of the bowels is the cause of the most violent attacks in youth. The most serious structural derangements of which palpitation is symptomatic, are enlargement or induration of the heart; aneurismal dilatation of its cavity; constriction of its valves, or its connection with the aorta; marked accumulation of fat around the pericardium; dropical collections within the pericardium; affection of the pericardium.

*Diagnosis.*—It is often extremely difficult to distinguish between functional and structural causes of palpitation. The following will serve as a general though not a universal rule: functional palpitations are intermittent, while those produced by organic affections are continuous; and to this I may add, that in all abnormal palpitations from functional derangement or nervous irritability, the character of the pulse is exceedingly variable; while in organic affections its abnormal character whatever that character may be, is nearly uniform. It may afford some consolation far involved with this affliction to know that not more than one in ten of those who are suspected, by themselves or by their physicians, of an organic cause, ever find more than a functional derangement.

*Treatment.*—As the disease is nearly secondary, all we have to do is to trace it to the primary malady, and treat that according to its character.

*Nervousness.*—A rapid and vibratory motion, or *trembling* of the eyelids is named as a distinct disease by some authors. When the eye has been frequently exposed to dust, or pungent gases, vapors, &c., a morbid sensibility sometimes remains after the cause of irritation has been removed, producing an irregular, convulsive, and unsteady working. It has been overcome by a powerful exertion of the will, and by employing only one eye at a time. Frequent cold bathing, followed by gentle manipulation, seems well adapted to restore the natural tone.

*Spasmodic.*—Sudden and irregular twitches or *startings* of the palpebral extremities, are generally indicative of extreme debility, and are hence common in low fevers, and the latter stages of every febrile disorder. But sometimes a feeble convulsive action is local and habitual. Nervous and irritable persons, of otherwise fair health, sometimes are troubled with a jerking, spasmodic action of the muscles of



the shoulders, hands, feet, &c. Such cases almost always depend on some obstruction of the skin, or bowels, or both, and are curable by a daily bath, coarse opening food, and cool injections.

**STRETCHING—PARALYSIS.**—It requires some stretch of imagination to regard what Dr. Good defines "transient elongation of the extensor muscles, usually with deep asperities and a sense of lassitude," as a distinct disease. Yawning, yawning, and stretching are instinctive efforts to *recover* the balance between the flexor and extensor muscles; and are sometimes excited by disposition, and at others by certain morbid conditions, as nausea, the shivering stage of fever and ague. Most frequently, however, that kind of stretching which authors have dignified with the title of a malady, under the name of paricalosis, is symptomatic of indolence; hence it is rather peculiar to loungers, who "cannot rise from the sofa without stretching their limbs, nor open their mouths to answer a plain question without yawning in one's face." The remedy is occupation.

## CHAPTER XL.

### DISEASES OF GENERAL TORPIDITY.

The diseases constituting the present chapter, are distinguished by general vascular immobility, with mental or bodily stupor. They form a striking contrast with those of the preceding chapter, and embrace the following species:

Asphyxia—Suspended Animation.

Ketor—Spurious Catalepsy.

Catalepsy—Trance.

Lethargy—Deep Sleep.

Apoplexy.

Caly	Hemiplegia,
	Paraplegia,
	Paralysis.

**ASPHYXIA—SUSPENDED ANIMATION—APPARENT DEATH.**—The term *asphyxia*, or *asphyxy*, is often used in the limited sense of asphyxia or paleasphyxia, and is generally restricted to that suspension of all the powers of sensitive and voluntary motion, which is immediately owing to non-artificiality of the blood from interrupted respiration.

But in a more comprehensive sense it has been, and in the present sense it is employed to denote all cases in which a total or partial suspension of the mental and corporeal functions characterizes the course of the disease.

*Symptoms.*—These vary with the producing cause. In apoplexy from apoplexy, as in hanging or drowning, the countenance is turgid and suffused with hot blood; the eyelids are protruded,

—coming out ghastly, like a scroogled man;  
The hair upstared, the muscles stretched with scrapping."

When the apoplexy is produced by inhaling carbonic acid—chloroform—or other irrespirable gas or noxious exhalation, the countenance is pallid, the whole surface is also pale, and death often takes place instantly, even when the diaphragm area is largely dilated with common air, in which case the symptoms more or less resemble asphyxia. Of the gases positively poisonous to breathe, are the carbonic acid, often found in close rooms where charcoal has been burned, in the bottoms of wells, or large beer-casks, and in mineral caverns; the carburetted hydrogen, and various compound gaseous products evolved from decomposing animal and vegetable substances, and from the putrefying corpses of creatures; and of the negatively noxious gases—those which do not support respiration—are hydrogen and nitrogen; some of these compounds, however, with sulphur, carbon, and phosphorus, are absolutely destructive. The fumes of mercury, lead, and various other metallic substances, when highly concentrated, operate with as sudden fatality as the fumes of charcoal.

In electrical apoplexy, which is produced by a stroke of electricity or lightning, the limbs are generally flexible, the countenance is pale, and the blood is irremovable; usually the limbs do not suffer after death, and the body becomes rapidly putrescent. Sometimes no external injury whatever is observable; but in other cases the skin is redened, the hair is scorched, and the body more or less lacerated and torn.

When the disease results from intense cold—frost-bites apoplexy—the limbs are rigid, the countenance pale and shrivelled; it comes on more gradually than the other forms; there is a tendency to sleep, which increases as the period of exposure is prolonged; and when this is joined with fatigue, the torpor and stupor often become irresistible.

Various narcotic poisons, as opium, tobacco, and Prussic acid, when taken in large quantities, and also the anæsthetic agents, as ether and chloroform, in extreme doses, will produce apoplexy, attended with total insensibility and universal muscular relaxation.

*Treatment*.—This must vary with the cause. The variety produced by *laeging* is hardly a medicinal case; yet if the strangulation has not continued too long, nor the neck-joint been fractured or dislocated, there is a chance of restoring respiration by some of the means about to be employed. Death from asphyxia does not result, as is generally supposed, by water entering and filling the lungs, but from suffocation produced by a spasmodic constriction of the glottis—an instinctive effort to keep the surrounding water out of the lungs. How long life can be maintained under water is uncertain; and this time probably depends partly on the natural capacity of the lungs, and partly on the extent to which they happen to be inflated when respiration ceases. Individuals can generally be resuscitated if not submerged more than five minutes; very often after having been ten or fifteen minutes under water; and in some instances persons have recovered after an hour's submersion. Recoveries have been reported after a much longer submersion—several hours, and even several days; but such reports seem to challenge human credulity rather severely. Be this as it may, our duty is plain; it is to endeavor to resuscitate the patient as long as there are the least indications of a spark of remaining vitality. Instances are well authenticated of persons having recovered after a persistence in the restorative means for eight or ten hours.

The remedial plan comprises two distinct indications: 1. To restore warmth and circulation to the surface. 2. To inflate the lungs. In the first place, the patient should be wiped dry, wrapped in clean warm blankets, and conveyed in a recumbent position on the back, with the head and breast raised, to a warm, dry, well-ventilated room, and surrounded by as many except the necessary attendants. Dry warm flannels, and bottles or bladders of warm water, or bags of warm grain or sand, are to be applied to the stomach, feet, and sides, and the surface should be thoroughly and perseveringly rubbed by the warm dry hands of the attendants. The mouth and nose should be promptly cleared of the obstructing mucus, and the fresh air may be sucked out by means of a tube, which may also be used for inflating the lungs, as in figure 187.

The inflation of the lungs is the most important of all the curative processes. This may be done by repeatedly forcing into the patient's mouth—the nostrils, meanwhile, being held close—a full expiration of air from the lips of an attendant, or by means of the tube represented in figure 187, alternating the expiration with moderate but firm pressure on the external abdominal muscles, so as to simulate all the motions of natural respiration. A common bellows, when well managed, is preferable, because it will convey pure, unexpired air to

the lungs; and if the bellows can be attached to a tube, and this introduced into the larynx, the effect will be better still.

Fig. 167.



INSULATING THE LUNGS.

It may excite the surprise of the non-professional reader to be told that bleeding, even in the asphyxiated state, is an approved allopathic remedy in this disease. Many physicians of "high authority" recommend opening the jugular; while other high authorities oppose the practice, not on the ground of its impropriety, but because the blood will seldom flow if the jugular is opened. Samuel Cooper dissenta in part. He says: "Bleeding might never to be employed in this stage of the process though it may become necessary when the circulation has returned and reaction has taken place." This means, liberally interpreted, that after the patient is out of danger it will not kill him to lose a little blood, although it might have been the death of him while the danger existed!

When the disease is caused by deleterious gases, narcotic or metallic fumes, etc., or the anæsthetic agents, the treatment chiefly consists in exposing the patient freely to the open air, dashing cold water in the face, pouring cold water over the head, and active Spongia with pulmonary inflation, as in the preceding variety. Ipecacuanha of cold water are also serviceable; sprinkling or dashing cold water over the surface, following the application with active friction with the bare hand, has been tried with evident advantage.

In the case of asphyxiated death from electricity, all the appliances just named may be called in requisition; but as far as experience can guide us, dashing cold water freely over the breast, face, and even the whole body, and the prolonged pouring-bath to the head, are the most important processes.



Here again, away of the shining lights of alchemy insist that the patient ought to lose a little of his blood, as well as all of his sensibility. M. Portal recommends opening the external jugular; Dr. Dumas thinks the abstraction of a few ounces has done good; and Dr. A. H. Stevens, of this city, has recorded a case of injury by lightning *successfully treated by copious venesection*; that is to say, the amount of blood drawn within ten days was about one hundred and twenty ounces! If a patient can survive a stroke of lightning long enough to go through a ten days course of venesection, it is conclusive evidence that he can live better without the venery than with it. Dr. Stevens has offered another demonstration of the old parable, that many patients recover in spite of the disease and the doctor.

In erythra from cold, the application of warmth must be carefully managed. When a limb or part is frozen, the coldest water should be employed in the first instance, and the temperature gradually raised; the patient, meanwhile, should be kept in a moderately cool atmosphere until the circulation is restored. Rubbing the frost-bitten part with snow until sensibility returns, and then wash warm water, and afterward the dry hand, is an excellent plan. In cases of extreme torpor from cold when no part is absolutely frozen, friction with wool flannel, or the dry hand is appropriate.

**ECSTASY.**—This affection is peculiar to those states of bodily derangement of which convulsions, trances, or extraneous states are symptomatic; hence it attacks chiefly melancholic, hypochondriac, senescent, and abstracted persons.

**Symptoms.**—The paroxysm consists of a sudden and total suspension of sensibility and voluntary motion, the pulsation and breathing continuing, with rigid muscles, and an erect and inflexible posture of body. In most cases there is also a complete suspension of mental power. The duration of the fit varies from two or three hours to as many days, at the end of which the patient awakes as from sleep.

**Special Causes.**—A excited state of the heart, powerful mental excitement; long-continued meditation on a particular subject; prolonged suspense of mind; venereal excesses; self-poisoning as common.

**Treatment.**—Out-door exercise by walking, riding, sailing; varied scenery; lively company; cheerful conversation; amusements of the laughable kind; regular employment or occupation, with a daily bath and plain food.

**CAVALENT.**—The only essential distinction authors make between

vestasy and trance is that of the flaccidity or inflexibility of the muscles: in this disease under consideration the muscles are lax and yielding, and the body yields to and assumes any given position. The eyes remain open, and are fixed directly upon some object, but usually no perception accompanies the apparent vision. This is generally caused or without perception, and in most cases closes with sleep. Its duration is from a few minutes to several days. This affection is sometimes counterfeited, and the real disease has been sometimes mistaken for actual death. The causes and treatment are the same as those of the preceding disease.

**LETARGY.**—*Deep sleep* does not perfectly express the leading character of this disease, as it is sometimes wanting. Letargy is distinguished from apoplexy, coma, and cataplexy, by the apparent general ease and quiescence of the body; and from apoplexy, by the eyelids being closed and the limbs gently reclining, as in natural sleep.

*Symptoms.*—Sometimes the sleep is profound, and without intervals of respiration, waking, or consciousness; sometimes the sleep is remissive, and the patient occasionally awakes and reverts somewhat and speaks constituting the *coma somnolentum* of authors; and in a third variety—the *typhomania* and *coma vigil* of pathologists—there is a perfect lethargy or insensibility of the body; while the mind is only imperfectly lethargic, manifesting confused and wandering ideas, and, during sleep, possessing a belief of wakefulness. This form is frequently a symptom in nervous fevers.

*Special Causes.*—Violent trauma, commotion, fright, furious anger, excessive mental labor, night-work, repelled eruptions or exanthema, congestion or effusion in the brain.

*Treatment.*—Essentially the same as in the preceding two diseases, save that the extreme must be of the restorative rather than laborious kind. The pouring head-bath is a promising measure during the paroxysm.

**APOPLECT.**—This disease is one of the results of a congested, obstructed, putrid, and overburdened body. Excessive alimentation, with defective depuration, and some internal visceral obstructions or compressions, are the obvious conditions in which the apoplexy depends; and hence we rarely remove this disease except among the full-fed, the corpulent or obese, and the gross or high bred; and even then we almost invariably find intemperance in the direction of the excreting organs or outlets of the body among the predisposing circumstances.

This view is simple enough, and not difficult to understand. But in medical books we find a world of confusion as to the whole subject. Every thing relating to its causes, seat, nature, and proper treatment, is there hypothetical, unsettled, contradictory—a mountain mass of scientific absurdity and crude inconsistency.

Some authors regard it as a disease of the sanguiferous system; others as an affection of the nervous system. Some writers contend that the immediate cause is *always* some effluvia, extrusion, or other structural derangement in the brain; while others declare that such circumstances are *never* necessary conditions. Some pathologists argue that compression of the brain is the *universal* immediate cause; while others as boldly theorize that the brain is *incompressible*. And in relation to treatment, some authors rely on copious bleedings and other depletory processes as the only hopeful treatment; others consider large bleedings as injurious, but go for small ones; while others condemn all bleeding and all depletion as bad, and advocate the very opposite treatment—blisters and general stimulents; and yet others consider bleeding good in some cases and bad in others, the great point of skill in the physician being to determine when to employ and when to withhold the lancet.

*Symptoms.*—The distinctions which authors make of this disease, into *asthenic* and *spasmodic*, *catonic* and *atonic*, *simple* and *complex*, etc., are unimportant, as they relate only to the greater or less debility of the patient at the time of attack. Sometimes the disease comes on suddenly without the least premonition; sometimes the attack is preceded by a sudden paralysis of one side of the body, and sometimes it is ushered in by acute headache, nausea, lightheadness, noises in the ears, confused vision, incoherence of ideas, loss of memory, and numbness of the extremities. The fit is characterized by complete insensibility; slow, slow, and usually stertorous or puffing breathing; impeded deglutition; dashed and fixed countenance; prominent and exorbitant eyes, and generally a fixed or contracted state of the pupil; the limbs are rigid, motionless, or convulsed; the bowels are obstinately constipated, or the flæces pass involuntarily; the urine is passed unconsciously, or retained until the bladder is full, then dribbling away. The pulse is variable; it may be full, hard, and quick, or weak and frequent.

*Diagnosis.*—It may be distinguished from the *stupor of drunkenness*, by the alcoholic odor of the breath in intoxication, and from the *narcoma* produced by various poisons, by the capability of occasionally rousing the patient in the latter affection.

*Treatment.*—The first thing to be done is to remove the patient to a

cool, spacious, well-ventilated apartment, I loosen all the clothing about the chest, remove every thing from around the neck, and place him in an easy and usually upright position, as in fig. 119.

Fig. 119.



POSITION IN APPEALANT.

Follow the preparatory measures with the curative processes, which consist mainly of the pouring head bath; warm water and warm cloths to the feet, and occasionally hot fomentations to the abdomen. If the fit continues, the cold stream may be applied to the head for a quarter to half an hour, several times a day; the cold wet girdle to the abdomen should precede the

hot fomentation, which may be resorted to every two or three hours, for ten or fifteen minutes each time; and friction to the lower extremities with a salt wet cloth, followed by the warm flannel or dry band rubbing, is a valuable auxiliary. No attempt should be made to give any thing by the mouth, until the breathing is materially relieved, and then only moderate draughts of cold water should be administered.

The prophylaxis, or preventive medication, consists in a daily cold bath, plain, simple, abstemious diet, regular hours for eating, sleeping, and resting, and a careful avoidance of all violent exertion, strong mental excitement, depressing passions, &c.

**PARALYSIS—PARALYSIS—PARALYSIS.**—The same general causes which tend to the production of apoplexy, are among the most efficient predispositions to palsy. The disease taken up, however, is more frequently dependent on organic changes; and when merely functional, is more generally considered with nervous exhaustion. The symptoms regarded apoplexy and palsy as modifications of one essential disease; "apoplexy being a total palsy, and palsy a partial apoplexy."

**Symptoms.**—Paralysis may be attended with a total or partial loss of sensation only in the part affected, or a loss of voluntary motion only, or of both. The preservative symptoms are sometimes the same as those of apoplexy, but more generally the disease comes on gradually, an occasional sense of weakness, and troublesome but transient feelings of numbness being the leading symptoms; and these are often at-



servable in a single finger, in one eye, the tongue, or one side of the face &c.

In the *hemiplegic* variety the disease is confined to one side of the body, which is affected from the top to the bottom of the vertical line. This form is often a sequel of apoplexy.

In the *paralytic* variety the lower part of the body is paralyzed on both sides, or any part below the head. When not caused by some local injury, it is almost always preceded by costiveness.

*Particular or local palsy* is confined to particular limbs, or to a particular part of the body. When it affects the face, the expression of countenance is peculiar, the features are drawn to one side, and of course the two sides are not symmetrical, and the deformity is increased when the patient attempts to whistle, speak, laugh, cry, sneeze, or cough.

A variety of local palsy, to which those who work in quicksilver mines, at water-gilding, &c., are subject, called *mercurial tremor*, comes on with weakness and convulsive twitchings in the arms, gradually extending to the lower extremities, and finally to the whole body; and another variety, called *lead palsy*, or *dropped hand*, which attacks glaziers, painters, oil-painters, enamel card-makers, &c., begins by a feeling of weakness in the fingers, and extends to the wrist, but rarely beyond it, shooting pains affect the arm and shoulder; the parts affected waste and emaciate, and the hand hangs loosely and uselessly at the wrist.

*Special Causes*.—Most of the causes of apoplexy: enlarged or indurated liver or spleen; constipation; venereal excesses; metallic fumes; tartarics; alcohol; purgative stimulants; acid anæsthesia, as squaria, turpentine; sudden and extreme alternations of temperature; pressure upon the brain, spinal marrow, &c.; fever tremors, injuries, extravasations, effusions; loss of nervous communication from structural degeneration; intense mental emotion; prolonged wakefulness, or excessive night-work.

*Treatment*.—The prospect of cure must be predicated upon the prospect of the cause or causes being structural or functional, which point, however, is not always easy to determine. But in either case the plan of evacuation is obvious, and the same. Some few cases are attended with a difficulty of respiration, and the indications of compression of the brain, resembling apoplexy, and require similar management. For bathing purposes, water should be employed as cold as can be borne without permanent discomfort; though, as a general rule, the bath should be of short duration. In paralysis of one side, the oblation or dripping-shaft may be the most common general bath; the wet-

sheet pack, followed by the planks, is still better when there is a good degree of remaining vitality. When the lower part of the body or lower extremities are pained, the shallow-bath is evidently the best bathing water process, and it may be aided by frequent leg and foot-baths. In all cases thorough friction by means of flannels, flesh-brushes, hand-rubbing, shampooing, etc., should follow the application of water. A moderate dose of liniment applied generally to the spine, and locally to the part affected is serviceable in most cases. When the superficial heat is too low, or the general torpor too great to admit of the full-sheet pack, the half-sheet may be beneficially employed. Whenever the extremities, or any portions of either of them are paralyzed, the wet compresses, well covered, should be constantly worn and frequently renewed. Careful attention must be paid to the diet; and to the state of the bowels. Cool liquors are generally necessary daily; the patient should drink moderately of cold water, and the general regimen should be precisely on the plan adapted to, and recommended for, the cure of dyspepsia.

## CHAPTER XII.

### VISCERAL TUMESCENCE.

A SWELLING, followed or unattended may exist in any part or organ in temporary obstructions, congestions, or inflammations; but the present chapter is limited to those affections of the internal viscera in which the enlargement is chronic or permanent. It includes the following varieties, which make the species of Dr. Gould's genus *pachyma* :

Hepatic—Enlargement of the Liver;			
Splenic,	"	"	Spleen;
Pancreatic,	"	"	Pancreas;
Mesenteric,	"	"	Mesentery;
Intestinal,	"	"	Intestines;
Ovarial,	"	"	Ovarium;
Complicated,	"	"	Various Organs.

**ENLARGEMENT OF THE LIVER.**—The structure and functions of the liver, as described in the physiological part of this work, explain the reasons why the liver is more subject to chronic enlargement than any

other organ is the body. The acutest alterations of structure which constitute its tuberculousness are various, as simple swelling, tubercular formations; hydatid growths; hardening, or induration; calcareous, or fatty degeneration; and that result of bad living and putrescent blood which pathologists have called black consolidation, in which the organ is reduced to a dark-colored mass of very little consistence, etc.—conditions which are difficult of diagnosis during life. Another form of structural development has been called cirrhosis, in which the biliary portion of the liver is both hypertrophied and indurated, as well as distended, from the effect of the free use of ardent spirits.

*Symptoms.*—With general derangement of health, and various symptoms of indigestion, particularly pale, yellow countenance, irregular and often whitish injections, a hard tumor may be found in the right hypochondrium, verging toward and often appearing at the pit of the stomach. In dropsical persons the swelling is sometimes enormous. An enlarged or indurated liver is common to persons who have suffered frequent or prolonged attacks of ague and fever, and has then been denominated *ague cald*.

*Special Causes.*—All the common causes of tainted blood and asparagus scurvy tend to disease the liver; but an obstructed skin, by which the decomposing and putrescent particles of the body are retained in the system, is the most efficient among them. Among the causes which operate indirectly in producing obstruction and enlargement of the liver, are concentrated food, animal oils, or greasy sauces, rancid flesh, shell-fish, stale meats, old cheese, etc.; and among those which operate more directly to produce functional disturbance, followed by organic changes, are alcohol, tobacco, hot drinks, violent passions, etc.

*Treatment.*—The indications are, 1. To promote as vigorous a current throughout the entire lymphatic system as possible. 2. To purify and invigorate the general system. For fulfilling the first indication, the “hunger-cure,” moderately but perseveringly employed, and a mercurial douche, frequently applied over the back, especially on its upper portion and over the shoulder-blades, are the best measures; and for the second, the wet-sheet pack, or shallow-bath, or both, where the external temperature is considerable, are the best among various useful processes. The abdominal compress should not be neglected; and when there is pain or tenderness about the epigastrie region, or in its vicinity, or when the bowels are habitually constipated, the warm steaming douche to the whole abdomen, followed by the cold bath, will be advantageous.

I may just observe, en passant, that there is some slight discrepancy in the opinions of standard medical authors regarding the treatment of

the spleen under consideration. Thus, Dr. Edwards recommends saline and mercury as the principal remedies; but Abercrombie says that the mercurial practice seldomly cures the patient in a very rapid manner.

**ENLARGEMENT OF THE SPLEEN.**—Pathologists seem to be generally of the opinion that structural diseases of the spleen occasion but very little mischief to the organic economy. I think differently. It is true that the consequences are much less apparent; but if the opinion I have heretofore advanced respecting the functional office of the spleen is correct, a derangement of its function must be followed by a loss of power, to some extent, throughout the entire range of the organic or nutritive functions; although such result would not be manifested by any special local symptoms, as in the case of a similar morbid condition of the liver.

Barnes Duguyres found that dogs maintained apparent good health after having their spleens extirpated; but medical writers generally confess that "the more the spleen exceeds its natural size in the human subject, and the longer it retains this abnormal condition, the more are the functions of respiration, digestion, etc., diminished, and the greater is the impairment of the general health." The key to an explanation of all these facts is within reach. The spleen is an appendage to the higher class, or brain-endowed class, of animals; and its especial office is to provide in part for the additional supply of organic nervous influence rendered necessary by the superstructure of the encephalic mass, while it performs a subordinate duty in supplying additional nervous influence to the general nutritive system. Hence the importance of the spleen in the animal kingdom has a direct relation to the size of the brain; which fact accounts for the lesser disturbance in disease or removal should produce in the small-brained than in the large-brained animal.

**Splenoma.**—It is known by an enlarged liver is the left hypochondrium, verging toward the spine; as with the preceding disease, there are symptoms of general ill health; but while in enlargement of the liver these symptoms assume the forms of jaundice and dyspepsia, they with an enlargement of the spleen, appear in the shape usually termed nervous debility. The patient seldom complains of pain in the region of the organ affected; his appetite is good, but he loses flesh and muscular strength; his features have a dark, bilious, or melanagic hue; the skin is dry, the lips are pale, and the patient is not infrequently morose and desponding.

**Special Causes.**—The disease often appears after obstinate intermit-



heat or excitant fevers; scrofulous constitutions, and constitutions debilitated by intemperance are very liable to it; sourly situated and stagnant waters occasion it; it has followed suppressed menstruation; and medical authors name Pterygia laci, which is so immoderately administered in intermittent fevers, as a cause of enlarged spleen. This affection also called *ague cake*.

**Treatment.**—The doanle should be frequently applied, with as much force as the patient can comfortably bear, to the spine and left hypochondriac region; and in all other respects the plan recommended for enlarged liver is to be pursued.

**ENLARGEMENT OF THE PANCREAS.**—This is a rare disease, or at least, rarely detected in the living subject, but occasionally abscesses, scirrhous indurations, tubercles, calcareous depositions, &c., have been found to occupy a part or the whole of its structure.

**Symptoms.**—These are obscure, except in extreme cases, when a hard, elongated tumour may be detected, extending transversely in the epigastric region, and accompanied with symptoms of dyspepsia and general debility.

**Special Causes.**—From the analogy existing between the functions of the salivary glands and pancreas, authors have judged the habitual excitement of the excretories of the former might be communicated sympathetically to the latter; and thus hence tobacco-smokers were peculiarly liable to this complaint; in confirmation of which, Dr. Darwin relates a fatal case which occurred in a great consumer of the article—“*chewing it all the morning, and smoking it all the afternoon.*”

**Treatment.**—As in the preceding varieties.

**ENLARGEMENT OF THE MESENTERY.**—Enlargement of this structure may be in the form of hyalids, of tubercles, scirrhous induration; fleshy, adipose, or fungous excrescences, or calcareous deposits; or several of these morbid alterations of structure may be consistent.

**Symptoms.**—The affection may be known by an indurated and irregular mass of tumour below the stomach, yielding to the pressure of the hand; the countenance is pale and bloated; the appetite is irregular, often voracious; and general atrophy or emaciation attends.

The causes and treatment are similar to those of enlarged liver.

**ENLARGEMENT OF THE INTESTINES.**—In some cases the induration is confined to the coats of the intestines; and in others adhesions unite the intestines to the walls of the abdomen and to each other.

**Symptoms.**—The int: nowence may be round or elongated, hard or

circumscribed; but is movable by pressure made with both hands; the action of the bowels is irregular; there is usually obstinate vomiting, and more or less fever and excitation.

Treatment.—In addition to the general remedial plan applicable to all varieties of visceral enlargement, the peculiar symptoms of the affection before us demand frequent use of cool water, cold compresses to the stomach, and the free employment of tepid injections.

ENLARGEMENT OF THE OMENTUM.—Thickening of the omental portion of the peritoneum, is usually of a circumscribed character—inflamed, scirrhous, cartilaginous, and indurated; in some instances the structure acquires almost a woody hardness.

Symptoms.—The tumor is indurated and diffused, extending frequently over the entire abdomen; it is accompanied with general excitation and difficulty of breathing.

The treatment does not differ essentially from that appertaining to enlarged liver.

COMPLICATED VISCERAL ENLARGEMENT.—This is merely a co-joint existence of several of the diseases we have already considered. It is denoted by a hard, distended, and distended abdomen, resembling that of pregnancy; the belly is, however, more or less knotty and unequal; the respiration is but slightly diminished; but there is usually acute pain, thirst, nausea, and vomiting. A diseased liver is the common starting-point of these structural monstrosities; and our only chance of cure is to employ assiduously, in the infancy of its malady, all the remedial appliances recommended under the head of enlargement of that organ.

## CHAPTER XIII.

### DROPSICAL DISEASES.

THE character of a dropsical affection may be denoted; a pale, indolent, and insidious distention of some part or of the whole body, from accumulation of a watery fluid in the areolar tissue or other natural cavities. There is, however, one exception to this definition, in the case of internal *hydrocephalus*, which, though usually regarded as a dropsical disease, is, in reality, a strumous inflammation of the brain.

The principal forms of disease belonging to the chapter before us may be grouped :

Cellular Dropsy	{	General—Anasarca, Local—Edema.	{	Dropsy of the External Hydrocephalus, (the Head) Internal Hydrocephalus.
				Dropsy of the Spine—Spina Tuba.
				Dropsy of the Chest—Hydrothorax.
				Dropsy of the Abdomen—Ascites.
				Dropsy of the Ovary—Hydrops Ovarii.
				Dropsy of the Fallopian Tubes—Hydrops Tubae.
				Dropsy of the Womb—Hydrops Uteri.
				Dropsy of the Scrotum—Hydrocele.
		Wound Dropsy—Erysipelas	{	Cellular, Abdominal, Limbic.
		Inflammatory Dropsy	{	Puerperal Tumor Leg. Tropical Tumor Leg.

It is amusing to read the lengthened discussions which have been carried on by medical writers respecting the proximate cause or essential nature of dropsy; one party regarding it as a disease depending on diminished absorption, and the other as ably contending that the fault consists in increased exhalation. The practice predicated on the former theory is evacuations, and on the latter, antiphlogistics. But as neither quinine nor bleeding effected a cure, a third party has lately entered the field of controversy, and cut the Gordian knot, by blending both doctrines in one; and declaring that diminished absorption and increased exhalation produce the disease, the therapeutic indication being to balance the action between the absorbents and exhalents. To this party we are indebted for the mercurial treatment of dropsy, which has proved even worse than its bad predecessors.

**CELLULAR DROPSY.**—This affection is called anasarca when it extends over the whole body; and edema when limited to the areolar texture of the skin.

**Symptoms.**—Cold and diffusive swelling or puffiness of the skin, which gets beneath the pressure of the fingers; the intensity is greatest in depending situations; and around the feet and ankles the accumulation increases toward evening, and decreases during the night. The skin is paler than natural, and when the distension is great it assumes a shining appearance, which often becomes livid and discolored, and not unfrequently breaks in extreme cases.

**Special Causes.**—All the causes of general debility predispose to dropsy. Intemperance, repeated eruptions, exhausting discharges, suppressed menses, and structural or functional obstructions of the kidneys, skin, and liver, are among the frequent causes. Glomerular swellings of the kidneys are often symptomatic of inflammation, pregnancy, etc., and frequently a result of renal debility, as is prostatic gonorrhea, etc.; constitutions broken down by exertion, are very liable to this disease.

**Treatment.**—In all dependent affections of the cellular membrane, the indications are, 1. To promote the absorption of the effused fluid. 2. To prevent its re-accumulation. The first indication is accomplished by promoting the activity of the excretory organs generally; and the second by strengthening the whole system; and either indication must be made the leading one, as obstruction or debility is the leading predisposing condition. As a general rule, quite cold water is preferable for bathing purposes, but the duration of baths should be short, and succeeded by warm and prolonged, yet gentle friction with oil or salt flannel or better still, the bare hand. The moderate douche, followed by a thorough rubbing in the dry blanket, and the mercurial pack, with warm bottles to the feet, and, if need be, the arm-pits, are among the best general baths. But as no two cases present the same set of circumstances, the practitioner will always find a wide field for the exercise of judgment. The diet must be mostly of the dry and unconcentrated kind, and water should be drunk only to the extent demanded by actual thirst. Tepid injections should be freely employed when there is the least tendency to congestion. The warm douche, or spray-bath, followed by the cold dash or post-douche, is an excellent process when the swelling is tender and painful, and particularly serviceable if applied to the lower part of the abdomen when the kidneys are torpid or obstructed, which will be known by scanty or difficult urination.

A great deal of importance is attached, by most medical writers on dropsy, to the chemical ingredients in the urine, and the changes the secretion undergoes in hydropic patients; and Dr. Johnson even advises patients at a distance, when writing for advice, to send along a bottle of urine for the purpose of chemical analysis. Now people ought to know that, however curious or interesting such experiments may be, they are of no utility whatever, as regards the cure of the disease; for whether the urine is a little more or a little less albuminous, or ammoniacal, or alkaline, or acid, or saline, it is all the same as far as the treatment is concerned.

**Dropsy of the Heart.**—*Hydrops Cordis.*—**External Dropsy of**



the head, commonly called *Acute Hydrocephalus*, consists of an accumulation of watery fluid in the ventricles or convolutions of the brain, or between the meninges, or between the bones and dura mater; and internal dropy—*acute Hydrocephalus*—is an inflammation of the meninges or substance of the lower part of the brain, which, in its progress, runs into suppuration, and produces effusion into the ventricles.

*Symptoms*.—In the first variety there is an insensate enlargement of the head, while the sutures of the skull are usually separated; the whole head appears preternaturally large, and the fontanelles are prominent; in its advanced stages it is attended with languor, fretfulness, restlessness, roaring, coma, frequently convulsions, and sometimes strabismus. The second variety—the *ophtalmia profunda* of Good's nomenclature—arises more gradually and insidiously; the positive disturbances are languor, inactivity, loss of appetite, feverishness, &c.; these are followed by darting pains in the head, great sensibility to light, contracted pupils, extreme tenderness, frequent sighing, disturbed sleep, from which the patient often starts with a scream; in a later stage the bones are irregular, the pulse small and frequent, and delirium and convulsions sometimes occur; as the disease progresses the pupil dilates, the eyes usually present a squinting appearance, and a low moaning takes the place of the shrieks; and near the fatal termination, double vision or loss of sight, with lethargic stupor, or violent convulsions occurs. Hydrocephalus is peculiar to infancy, and sometimes commences in the fetus.

*Special Causes*.—Scrophulous, syphilitic, or syphilitic taint; repelled eruptions; injury to the brain during labor; bad dietetic habits of the mother during pregnancy; frequent exposure of the mother during pregnancy, or of the child soon after birth, to the powers of miasmatic poisons, particularly ichthias.

*Treatment*.—We can promise but little in either form of hydrocephalus unless detected and treated in the early stages. The general plan of management is the same as for the preceding disease, save that a good part of the treatment should be derivative—full legs, and foot-baths, and the wet girdle to the abdomen. The pouring head-bath is advisable in the chronic or internal variety. The external fulls has in some instances been relieved by evacuating the water with a halet, osmick-snooze, or trepan.

*DROPT OF THE SPINE*.—This affection is mostly congenital; it consists of a soft fluctuating tumor on the spine, from fluid accumulated within the coats of the spinal cord, protruding externally in consequence of some portion of the vertebral column being defective. It

is generally fatal, although a cure has taken place spontaneously in a few instances, and several cases have been reported as cured by repeatedly puncturing the sac with a fine needle. With the exception of this surgery, if deemed advisable, the proper course is to attend to the general health, and "trust to nature."

**DROPPY OF THE CHEST—HYDROPS THORACIS.**—In this affection the fluid may accumulate in the cavity or cavity of the pleura on one or both sides, or in the mediastinum, or pericardium, or even the cellular texture of the lungs. These distensions, however, are neither possible to ascertain during life, nor important practically.

**Symptoms.**—With a constant sense of oppression in the chest, there is difficult breathing on exerting or reclining; the countenance is more or less livid; the pulse empty and high colored; the pulse is irregular; the secretions are abundant; the patient is often troubled with startings and palpitations during sleep; a distressing feeling of suffocation frequently attacks; and the patient can get no rest but in the erect posture. It usually attacks persons in advanced life.

**Special Causes.**—Hypertrophy of the heart, anasarca, weakness of the stomach and liver, and other organic derangements, frequently produce hydrothorax. When idiopathic, if ever, it is produced by the common causes of dropsy.

**Treatment.**—In a majority of cases our prognosis must be unfavorable; the derivative baths, and the principles already adorted to be applicable in the treatment of dropsy in general, are all our grounds of hope in this case before us. Some few cases are reported in medical works as having been cured by *paracentesis thoracis*—an operation which will be described in the surgical department of this work.

**DROPPY OF THE ABDOMEN.**—*Ascites*, or dropsy of the belly, is called *encysted*, when the fluid is contained in a cyst or sac of adventitious formation, instead of accumulating in the cavity of the abdomen itself.

**Symptoms.**—It is known by an equal, tense, and heavy distension of the whole belly, which distinctly fluctuates to the hand upon a slight stroke being given to the opposite side.

**Diagnosis.**—In the encysted form the size of the abdomen enlarges gradually and steadily, without experiencing any sudden increase, decrease, or change in the swelling; whereas the distention is often temporarily diminished by treatment or accidental causes, when the accumulation is within the cavity of the abdomen; from *coarcted dropsy*, by the interstices commencing lower down and on one side in the

latter disease; from *symplesis*, by the distension on percussion, and by the fluctuation; from *ritention of urine*, by the dribbling of urine in the latter affection; from *pregnancy*, by the fluctuation, and state of the venous and breasts; and from *cyts or hydroëls of the liver*, by the swelling in the latter case being more circumscribed, and commencing on one side of the upper part of the abdomen.

**Special Causes.**—Repellent eruptions, or scorchings, very frequently produce this disease. Mercurial ointments, lead washes, and other discutient and repellent lotions and medicaments, have often changed the morbid action from an external skin disease to an internal dropy. Suppressed catarrhs and metastatic gout are also dropsical causes; and it is often symptomatic of diseased or disorganised liver, kidneys, and other organs.

**Treatment.**—The encysted variety cannot be cured without the operation of tapping the abdomen. The general health should always be improved as much as possible before the operation is performed, for which purpose the pucking, *douche*, and foot-baths are necessary. Surgeons are always apprehensive of danger from inflammation attacking the punctured part, but the danger chiefly arises from the inflammatory or febrile state of the body, or the obstructed condition of the excretories at the time of the operation. If the general system is put in good condition, the simple operation of drawing off the water by tapping can seldom be serious, much less dangerous.

When the watery fluid is collected within the peritoneum an operation is sometimes necessary; but frequently it can be cured by the general plan of management applicable to cellular dropy. The abdominal bandage, well covered and renewed five or six times a day, and a free use of injections, are specially desirable in this form of dropy.

**Ovarian Disease.**—Dropy of the ovary is always of the encysted character, and the cysts are generally combined with enlargement of the ovary itself, which becomes converted into a hard, whitish, cartilaginous mass.

**Symptoms.**—The tumor commences on one or both sides of the iliac region, and gradually spreads over the abdomen; its surface is unequal, and its fluctuation is obscure and feeble, and is some times entirely imperceptible. The general health is at first but little impaired.

The causes of ovarian dropy are similar to those of ascites, and the remedial processes must be conducted on the same general plan. Tapping should never be resorted to until the increasing distension begins seriously to affect the general health; the operation cannot be relied on to effect a permanent cure, but with attention to the general health,

may keep it in check, so that the patient may enjoy comfortable health for an indefinite period. In many cases the operation requires to be repeated several times. Extirpation of the ovary has been successful in a few cases: but the majority have not long survived it.

**FALLOPIAN DROPSY.**—Dropy of the Fallopian tube is extremely rare; in its early stage it is known by a heavy, elongated swelling of the iliac region, spreading transversely, with obscure fluctuation. The quantity of fluid is generally greater than that accumulated in the preceding variety; and the prospect of cure is still less promising, although the same measures are applicable.

**DROPSY OF THE UTERUS.**—This disease—the *hydrometra* of the old authors—is generally the result of some structural affection of the uterus. In some few cases, when the orifice of the uterus is closed, water collects in its cavity; sometimes a large cyst, or cluster of hydatids, originating between its tunics, is discharged, accompanied with severe flooding; and occasionally the fluid accumulates in its cellular tissue, by which the organ is distended to an enormous size, while the whole abdomen appears tumorous.

**Symptoms.**—Heavy, circumscribed tumor or protuberance in the hypogastric region, attended with obscure fluctuation, and progressively enlarging; the mass of the uterus is thin and yielding, and the complaint is unaccompanied with pregnancy or ichthy.

**Treatment.**—The general remedial plan is the same as the preceding variety. When the mouth of the uterus is closed, the water may be evacuated by the introduction of a cannula.

**DROPSY OF THE VAGINA.**—In some cases the fluid is contained in the tunica vaginalis, or surrounding sheath of the testis; sometimes in the cellular membrane of the scrotum; and in a third variety the fluid has accumulated in the tunica vaginalis of the spermatic cord. Dissected hydatids is that form of the disease in which the communication between the cavity of the peritoneum and tunica vaginalis is closed, the fluid collecting within the latter.

**Symptoms.**—The signal, or first named variety, is the proper hydatids. The tumescence is soft, transparent, and pyriform; it is unattended with pain, and enlarges gradually. In some cases the tumor is so distended and transparent that a cisticle may be seen through its contents.

**Treatment.**—In recent cases, very cold sitz-baths and the ascending douche, each repeated several times a day—or refrigerating local appli-



tations of acid-water or powdered ice, in connection with the general treatment recommended for the preceding cases, will often effect a cure. When the case has been of long standing, the operation, to be described hereafter, will be necessary.

**EMPHYSEMA—INFLATION—WIND-DROPPY.**—This affection, which is caused by an accumulation of air in the natural cavities, differs from dropsy proper in the distention being elastic and sensuous. Sometimes the disease results from external injuries penetrating the lungs; sometimes the air is formed, by a process of putrefaction or decomposition; and sometimes it is secreted directly from the blood.

*Symptoms.*—In the *inflator* variety—the putrescence of Sauvages—the distention is sometimes limited to particular parts of the body, and sometimes extends over the whole surface. It is marked by a tense, glabrous, diffuse immobility of the skin, which crackles beneath the pressure of the fingers. When arising from a wound in the chest, which penetrates the lungs—*traumatic emphysema*—the inspired air may rush into the cavity of the chest, the cellular membrane of the lungs, and even become diffused throughout the areolar tissue, producing a universal inflation, which is attended with violent palpitation and extreme danger of suffocation. Occasionally the inflation is confined to one side of the chest; it is then called *pneumothorax*; and this form is sometimes produced by ulcerations which destroy some part of the pulmonary structure. When arising from *self-poison*, *malaria*, or other venum, the disease is accompanied with extensive signs of putrescence and impending mortification.

In the *abdominal* variety—*tympany*—there is a tense, light, and equable distention of the belly, which distinctly resembles to a stroke of the hand.

When the uterus is inflated with air, there is light, tense, circumscribed immobility in the lower part of the abdomen, obscurely sensuous, and accompanied with occasional discharges of wind through the mouth of the womb.

*Treatment.*—All the varieties of the disease before us are, happily, very rare, with the exception perhaps of tympany, and this is mostly a symptomatic affection. The general plan of treatment is the same as for dropsy of the same structure or organs. In emphysema from wounded lungs, the operation of puncturing between the ribs is sometimes attended with benefit, and the dripping-sheet, followed by dry rubbing or hard friction, is probably the best of the strictly hydropathic processes. When occasioned by poison, the wet-sheet, or mustard as to produce *mechanic displacement*; cups of fresh-water, copious

injections, etc., on the plan recommended for anatomical erythema, should be resorted to. In the abdominal and uterine varieties, copious cold injections by means of the pump and vaginal syringe, are to be frequently employed; the spray-bath and the ascending douche are also valuable assistants.

**INFLAMMATORY DROOP.**—This term is rather awkward, but, unfortunately, I cannot find in the whole range of pathological nomenclature any more appropriate one; and I do not care to invent new technicalities, especially as we have already a vast superabundance. The term comprehends the two diseases, *elephant leg*, which is peculiar to hot climates, and *phlegmasia dolens*, which is peculiar to lying-in women, both of which are characterized by a tense, diffuse, inflammatory swelling of one leg.

**Symptoms.**—In the tussal leg of childbed, which has been variously designated *postpartal swelled leg*, *hemorrhia purpurascens*, *phlegmasia dolens*, *phlegmasia latic*, *ecchymosymphodica*, *distended uterus*, *venal phlebitis*, and *crasis*, the attack usually comes on in the second or third week after parturition; the inflammation is pain, glabrous, equal, elastic, and acutely tender; to the touch there is a sensation of numerous irregular prominences under the skin, and it is accompanied with a constitutional febrile disturbance of the hectic type. In a majority of cases the attack commences with pain in the groin of one side, accompanied with fever, and followed by a swelling, which extends down the thigh and leg to the foot, and in a day or two the whole limb is double its natural size, hot, smooth, exquisitely tender, and moved with great difficulty. The fever usually begins to decline in two or three weeks, but in some cases runs for six or eight weeks, causing extreme emaciation. In a very few instances both limbs are affected simultaneously; and is still rarer instances the arms have been attacked; in many cases the affected limb has remained enlarged and weak through life. It may be added here that a disease very like the one before us, if not identical, has sometimes affected the male sex.

The second variety, the *Barbadoes leg*, *hemorrhia tropica*, *elephant leg*, is common to hot climates, especially the West India, Arabia, and the Polynesian Isles, where it is called *yara-ata*, from the supposition that it is caused by drinking a heating beverage called *yara*; "and like the great among warblers," says Dr. Good, "is regarded in a sort of honorable light." It is known, however, in temperate climates, and a few cases have occurred in the United States. The limb is hard, hot, and continuously swollen; the skin is at first glabrous, but afterward becomes thick, scaly and warty; in some places bulging out, and in

often deeply infected; the attending fever is irregularly hectic and intermittent, which eventually subsides, and the disfigured limb becomes insensible, and only troublesome from its weight and bulk, which, however, is regarded in some semi-civilized countries as a badge of honor, as the gait is in places where the inhabitants pretend to be wholly civilized.

*Special Causes.*—The puerperal variety is unquestionably owing to a condition of body which may significantly be termed the constipated diathesis. The general pressure on the blood vessels and lymphatics during pregnancy, and the inflammatory condition of the whole system, which are the common consequences of the ordinary method in which females are fed and doctored through pregnancy and delivery, are exactly calculated to produce this and every other disease of the puerperal period. The complaint under consideration, though very common in allopathic practice, has never been known, and probably never will be, where the patient has, through the term of gestation, lived and labored hydropathically.

The second variety is as clearly among the penalties which exercise and unrelenting nature has attached to the use of debilitating stimulants, and impure, unwholesome, and obstructing food, with restriction to the subject of a clean skin.

*Treatment.*—Puerperal swollen leg must be treated precisely as an acute inflammation. The wet-sheet pack, or frequent tepid affusions of the whole body, and the constant employment of cold wet compresses to the local affection, are the leading measures of treatment; cold water may be freely drunk; and cold injections are generally necessary. The food must be of the kind called "fever diet" in this work.

Medical authors—and they have exhausted many poisonous treatments on the subject—are singularly at variance, and as it appears to me, singularly foolish, in their notions of the nature and treatment of this disease; while their practice, or the disease under their practice, or the patient under both, has been equally unfortunate.

The second variety can only be successfully mediated in its early stage. The pack and dripping-sheet, the leg-bath and leg-douche are the most important processes, with due attention to simplicity and purity of food. Abstinence has been tried, but in most cases becomes, or a gangrenous ulcer has formed; perhaps, however, because the general health was not duly cared for previously to performing the operation.

## CHAPTER XIV.

## DISEASES OF MINERALIZATION.

THE title of the present group of diseases is taken from the most prominent symptom, which, though indicative of an excess, deficiency, or mismineralization of the bony structure, does not very well express the essential nature of productive cause. It includes:

Rickets—Rachitis—Rachitis.  
 Crohn's—Cystitis—Cystitis.  
 Melius Ovarii—Softening of the Bones.  
 Fragilis Ovarii—Brittleness of the Bones.  
 Osteomy—Osteomy of soft Structures.  
 Exostosis—Bony Tumors.

**RICKETS.**—This disease is probably of modern date. The first account we have of it was published by Glisson, as it occurred in England in the middle of the seventeenth century.

**Symptoms.**—The malady sometimes exists at birth, but more frequently the first indications are observed from about the eighth month to the third year. It is preceded by a paleness and pallor of the countenance, and a yellow, sallow tinge of the cheeks; the body at length emaciates, the flesh becomes flaccid, the lower limbs grow thin, while the head increases in bulk, the forehead becomes prominent, the spine bends, the belly is tumid, and the joints are loose and spongy. The mental faculties are usually clear and often precocious.

**Special Cause.**—Hooper says the causes of this disease are, "bad nursing, bad air, bad food, want of cleanliness." It is certainly the most philosophical discourse on aetiology I have ever read in an allopathic book. He might have gone further back, and told us as truthfully that bad air and bad food, and infection by personal channels on the part of one or both parents, produce the predisposition to it—the *carabole diathesis*.

**Treatment.**—One or two daily ablutions, pure air, plenty of sunshine, good mother's milk, abundant cold water-drinking, and brown bread, barley, wheaten grouts, potatoes, and good fruits, are all that need be named among the remedial agencies. More or less deformity will always exist.



**CACIUMUM.**—The essential differences between this disease and the preceding, are the tendency to goitre or enlargement of the thyroid gland, and the small size of the brain, with thick skull bones, which characterise the present affection.

**Symptoms.**—The bony development chiefly affects the head and neck; the body is stunted; the skin is wrinkled; the complexion is wan; the constitution is tacit and stupid; the cranium bulges out, particularly in the occipital region, while the crown and temples are depressed; the sensibility is blunted; all the mental faculties are feeble or elastic; the vocal efforts seem to be wholly wanting; and a majority of the unfortunate sufferers are both deaf and dumb.

**Special Causes.**—Cretinism was first noticed about the same time that rickets first appeared; it has prevailed severely in the low lands of Switzerland, in the secluded valleys of the Alps, and other damp, shaded, or confined places; hence the causes of rickets and cretinism cannot be essentially different, nor need we add any thing to the treatment suited for the former.

**MALARTER OVIUM.**—A general feebleness of the bony structure, formerly designated *spina ventosa*, is commonly found in the early periods of life, as frigidity or fertility is peculiar to later age. Its immediate cause is, of course, deficient assimilation of osseous materials, but its more remote and more important cause must be further back, in some derangement of the primary nutritive functions.

**Symptoms.**—A bowling or crooking of the bones in different parts of the body, on slight exertion, with little or no pain.

**Treatment.**—Medical books, in consideration of the deficiency of earthy matter in the bones, have undertaken to remedy this difficulty by introducing phosphorus of lime, chalk, carbonate, &c., in liberal doses, into the stomach; and, although such practice may seem very reasonable to those who cannot look beyond a chemical but in a physiological law, it has never, to my knowledge, been productive of the least benefit. The rational curative measures are the same as for rickets.

**FRAGILITAS OVIUM.**—In this affection the substance of the bones becomes so brittle that it is apt to break on slight exertions. The immediate cause is a deficiency of the materials of the gelatinous structure; and the general treatment is the same as for the preceding variety.

**Osteolect.**—This term imports an *osteiolethra*, a bony habit of

body. The disease consists in a superfluous retention and deposit of ossific matter, by which the soft parts are more or less indurated or obstructed.

Authors divide this affection into the *pneumatogenous* and *vascular* varieties, as the bony material accumulates in the substance of organs, or in the cells or interstices of vessels. The kidneys and bladder are most liable to calcareous concretions, for the reason that they are especially designed to secrete from the blood and expel from the body the greater portion of effete alkaline and saline matters; hence *gravel* and stone may result from too great a portion of earthy material in the food, or from deficient elimination of its excess in consequence of functional obstruction or debility. Ossific deposits are also occasionally found in the lungs, lungs, thyroid gland, substance of the heart, structures of the eye, muscles, &c. The vascular form more frequently affects the aorta or other large arteries, and the uterine vessels; but in some instances the pleura and other membranes, the trachea, and various cartilaginous structures swell. In all these cases the symptoms are exceedingly obscure, and the treatment cannot be better expressed than by the general phrase—attention to the general health.

**EXOSTOSES.**—Chalklike or bony tumors may be seated immovably on a bone, or on the periosteum, or pendulously in a joint, or fixed or movable in some fleshy part of the body. These affections are generally sequels of past rheumatism, syphilis, &c., but sometimes appear in persons of ordinary, though, of course, not perfect health. They are all cases for surgical treatment, and are only to be cured by excision or amputation.

## CHAPTER XV.

### DISEASES OF IRRIGATION.

The diseases of the present group are somewhat incongruous in a pathological point of view; but as they are susceptible of a generic definition, no direct violation of pathological propriety is committed in the arrangement. They may be distinguished by darting or local pain, occurring in paroxysms with irregular intervals, or by prolonged sensation, without fever, inflammation, or structural change.

They are all symptomatic of nervous exhaustion, functional obstruc-

tion, inflammation, or local accident or injury; and it is only when the primary morbid condition is too obscure to be recognized, that they are to be treated as idiopathic maladies. The following are all that require special consideration:

Cephalalgia,	Syncope,
Neuralgia,	Morbid Sight,
Nauseasus,	Morbid Hearing,
Vertigo,	Morbid Smell,
	Morbid Taste,
	Morbid Touch.

**CEREBRALGIA—CEREBRALY—HEADACHE.**—The astounded and intelligent student, who will diligently labor through the various attempts which have been made by medical authors to define, describe, arrange, classify, expound, and medicate the single and seemingly simple subject of headache, will find enough of confusion confounded to convince him that a system, as hazy as the fumes of a vision, has engaged the minds of many medical philosophers, rather than a careful and correct observation and arrangement of the phenomena of health, disease, and various forms. The ordinary and every day causes of headache are, indigestible food, overladen stomach, congested bowels, rapid liver, inactive kidneys, obstructed skin, oppressed lungs, colds, flatulency, violent passions, suppressed natural excretions of all kinds, and their consequences, thick blood, irregular circulation, &c., &c., to which may be added the direct effect of stimulating drinks or medicines, or their sudden withdrawal after the system has been accustomed to their use. And the pain of headache will be acute, chronic, periodic, throbbing, local, or general, &c., according to a multitude of circumstances which hang upon each individual case. All this is plain and straightforward. But let us see what the books say. Much learning has merely made them so. Thus Sauvages divides headache into acute, chronic, and partial; the acute he subdivides into phlogistic, catarrhal, hemorrhoidal, dyspeptic, febrile, throbbing, intermitting, paroxysmal, infamatory, catarrhal, nervous, hysterical, and the mercurial; the chronic he subdivides into apoplectic, cerebral, arthritic, rheumatic, saturnine, pleuric, and serous; and the partial he subdivides into partial in eyes, and, &c., and frontal disease, parietal, occipital, and the female hemorrhagic. Frank divides headache into four species, cephalalgia, cephalaea, hemi-crania, and chronia; and in respect to their nature, he subdivides them into inflammatory, rheumatic, generic, arthritic, mercurial, periodic, acro-fila, catarrhal, apoplectic, and serous. Dr. Good divides headache into stupid, chronic, throbbing, nervous, and sick. Dr. Berber

divides headache into muscular, pericranial, congestive, organic, dyspeptic, and periodic. Dr. Westhead divides headache into dyspeptic, nervous, plethoric, rheumatic, arthritic, and organic. Dr. Copland divides headache into nervous, congestive, plethoric and inflammatory, dyspeptic and bilious, cerebral, pericranial or neuralgic, rheumatic and arthritic, periodic, hypochondriacal, and the sympathetic. Dr. Hooper divides headache into internal and external; the former being subdivided into congestive, sympathetic or dyspeptic, and organic; and the latter into muscular, pericranial, and neuralgic, etc., etc.

The same confusion prevails among medical nations with respect to the pathology and treatment of this complaint.

**Treatment.**—Whether idiopathic or symptomatic, all severe headaches require prompt and special palliative evolutions, although the cure must be sought in the removal of the causal condition on which they depend. The majority of cases can be relieved at once by putting the feet in warm water, and applying cold wet cloths to the head. The hot fomentation to the abdomen is often sufficient. When arising from suppressed menstruation the water hip-bath is advisable. When the cause is a sudden cold, the wet-sheet pack should be employed. If the stomach is exceedingly irritable, and troubled with alternate nausea and vomiting, warm water-drinking and the pouring head-bath constitute the most efficacious practice. When arising from the sudden abstraction of starch, as of wine, tea, coffee, tobacco, etc., the patient should keep very quiet for several days, and walk, sit, or lie down, as he feels most comfortable, and take frequent warm foot and cold head-baths, waiting patiently for nature to restore the natural sensibility and tone of the organs, so that its machinery can work again without the aid of artificial stimulants.

**NEURALGIA.—NERVE-ACHE.**—Neuralgia is another of those diseases which are among the growing evils of the increasingly corrupting customs of civilized society. Until a very modern date, the only form of this disease known to medical men was the *tic douloureux*, or neuralgia of the face; now, however, neuralgic pains, in almost all parts of the body, are very common afflictions. The face, jaws, feet, and breast, are, however, most frequently the parts affected.

**Symptoms.**—The disease is recognized by acute lancinating pains, along the course of one or more nervous branches of the organ or part affected, which recur in short paroxysms, with irregular intervals; usually there is more or less twitching or irregular convulsive motion of the adjoining muscles. In facial neuralgia the pain shoots from the region of the mouth to the eyes, ears, cheek, palate, fauces, and teeth,



sound teeth have sometimes been extracted on the supposition that some concealed ulcer or caries occasioned the pain. When the foot is attacked, there are racking pains about the heel, darting toward the ankle and bones of the tarsus. In nerve-aches of the breast the sharp darting pains usually diverge from a fixed point in the breast, and shoot from the centre of the ribs and arm to the elbow. When other parts, regions, or particular muscles are attacked, the disease is easily recognized by the sharp, darting, cutting, and interesting character of the pain.

*Special Causes.*—All the causes of dyspepsia, and every thing conducive to nervous debility, are among the causes also of neuralgia. Those exciting influences which more especially predispose to this disease are tea, coffee, alcohol, tobacco, excessive brain labor, and depressing emotions, as grief, fear, anxiety, suspense, disappointment, &c.

*Treatment.*—I know not upon what principle our allopathic friends suppose all the most virulent powers of their external medicine for the treatment of neuralgia, unless it is that the more powerful the pain the more potent should be the power; or in other words, the more a patient suffers from disease, the more he should be made to suffer from drugs. Arsenic, belladonna, Prussic acid, hyosine, strychnine, opium, quinine, &c., &c., is terrific doses, are put forward as the most promising remedies, while surgery comes in and kindly offers to intercept the morbid sensibility by dividing the affected nerves between their point of distribution and the common sensorium.

The disease before us appears under so many complications that the most experienced hydropath will have to feel his way in the majority of cases. Every circumstance affecting the general health must first be inquired into and placed under organic law. Usually some one of the extrinsics will have been for a long time torpid, and frequently the bowels, skin, kidneys, and liver are all obstructed. The majority of patients we meet with, too, will be worn down with suffering, and poisoned through and through with drugs, or further reduced by depletion, as bleedings and blisterings; hence they will generally be exceedingly tender and susceptible.

The treatment should generally begin with gentle bathing in tepid or warm water, followed by moderate friction or hand-rubbing. The temperature of the water should be raised as far as possible—taking care, however, to avoid aggravating the pain by a sudden chill—continually with securing a comfortable glow after each application. In more far cases, where the external heat and capillary circulation are not materially deficient, cold, and even very cold water, is more salutary and agreeable than tepid or warm. Local baths, as compresses, half-bath,

and foot-baths, should be first employed, followed by the hot or full pack, dripping-sheet, plunge, and douche, as the varied sensibility dissolves and the strength improves. In many cases there is a kind of sub-paralysis of the limbs, or a rheumatic lameness and rigidity of the muscles of the affected part; in these cases the warm douche, followed by the cold douche, is excellent.

**SLEEPLESSNESS.**—This affection, which is characterized by a difficulty or inability of sleeping, is, when not symptomatic, produced by some mental excitement or bodily disquiet. In the former case the mind is lathes to surrounding objects; and in the latter the attention is alive to them. Severe study, intense attention to business, and protracted watching, are common causes of the former variety, and cold feet, eating near bedtime, taking stimulating drink in the evening when unaccustomed to it, or abstaining after having been habituated to it, are the ordinary causes of the latter. The remedies are a hip-bath or dripping-sheet at bedtime, when the trouble arises from mental causes; and the warm foot-bath, abdominal girdle, active out-door walking, and exercising in a cold room while in a state of wakefulness—of air-baths—when the causes are corporeal.

**RESTLESSNESS.**—There are two stages of general bodily disquietude, which authors have regarded as distinct diseases. One is familiarly called *idioty*, and distinguished by a perpetual desire to change the bodily position; and the other, called *mania*, is known by an equally restless desire of perpetual locomotion. The common cause of the idioty variety is too long confinement of the whole body, or any part of it, in a nearly motionless position. Children in school, writers at the desk, females with the needle, especially those of active brains and irritable temperament, often suffer severely for want of free and frequent exercise of the whole muscular system. Warm and some kinds of this diseases sometimes produce this complaint.

The anxious form of restlessness is peculiar to persons of a highly nervous temperament, and is attended with a distressing or uneasy sensation, particularly about the precordia. Constipation is a frequent cause in acutely irritable persons, and difficult, local, or pecuniary circumstances, or projects in relation to the future, on which the mind dwells intensely, are among the most frequent of the mental causes; and our medication must be directed to the removal of the existing cause, whatever that may chance to be.

**ANOREXIA.**—A feeling of intense repugnance or horror at the

presence of particular objects, or the introduction of particular subjects, constitutes one of the many singular idiosyncrasies of our fallen nature. Some persons will sick at the sight or taste of either of these; some feel the swell of roses and mint, or the sound of music, painfully disagreeable; some will detect the presence of a rat in the room without the aid of the external senses; some are ready to faint at the sight of blood, worms, sores, crabs, lobsters, toads, vipers, and other unrightly animals; and some will scream frightfully at the appearance of a mouse or spider. Probably these peculiar traits of idiosyncrasy may be produced by fright or other accidents in early life, or by some powerful and perhaps forgotten mental impression of the mother during the period of gestation. The only chance of cure seems to be, in gradually accustoming the patient to the object of aversion.

**Vertigo.**—Different forms of vertigo are known by the terms *dizziness*, *swimming of the head*, *blind head-ache*, and *verrout* (wanting fit); it is a frequent accompaniment of head-ache, and is owing to the same exciting and predisposing causes.

**Symptoms.**—The patient, while at rest, experiences an illusory gyration, or objects around him seem affected with a whirling motion; there is also a sense or fear of falling, with some degree of mental confusion. In some instances the dizziness is combined with illusory sounds, as whispering, murmuring, ringing of bells, hearing of drums, roar of cannon, &c.

**Special Cause.**—The immediate cause or proximate condition is a preternatural pressure of blood upon the nervous substance of the brain; and this is owing in most cases to a morbid viscosity of the blood from retained bile, putrescible matter, or other effete material.

Extreme debility, whether from hard labor, starvation, hemorrhage, or protracted diseases, favors the condition of the brain from which vertigo results, for the reason that the action of the heart being weakened and the capillaries contracted or paralyzed, the blood is pressed with disproportionate force upon the brain. The exciting causes are usually sudden exertion or hurried motion, as twisting the head, stooping, &c. Any considerable motion to which the body has never been accustomed, as sailing, swinging, walking circularly, sitting backward in a carriage, &c., may occasion vertiginous sensations if healthy persons. Intoxication, narcosis, and sinker-fever also produce dizziness, which is experienced on every attempt at motion.

**Treatment.**—When the body is full and plethoric, or there are evidences of bilious accumulations, a warm water emetic is advisable. In all cases the bowels must be kept entirely free by plain, coarse food,

and injections if necessary; and the skin kept open by one or two thoroughly daily ablutions. In other respects regard must be had to the elastic condition. When excited with great facility, emersion, loss of blood, or immersion, quiet and sleep are among the leading remedial agencies.

**SYCOPE.**—*Stunning and fainting-fit* are the principal varieties of the malady before us, which is distinguished by diminished sensibility, inability of attention, with feeble or imperfect motion of the heart and lungs. The general causes are the same as those of the preceding disease, although to the exciting causes may be added extreme pain, violent passions, sympathy, sudden fright, sudden effusion of blood, rapid evacuation of fluid accumulated in the crania of the body, as in dropsy, sudden discharge of the matter of extensive abscesses, retrocession of articular and eruptive diseases, excessive fatigue, &c. The treatment consists of a free current of cold air; sprinkling cold water in the face; and if the syncope is prolonged, pouring cold water over the head, and applying the cold compress to the stomach; to which may be added the recumbent position, fig. 169, and warm water with friction to the lower extremities. As soon as the patient can swallow a draught of cold wine should be administered.

FIG. 169.



FIGURE IN VESICER.

Dr. Good says—I quote to contrast, not to condemn his treatment:—“As soon as the patient is capable of swallowing, some spirituous cordial, a glass of wine, brandy and water, fourc tincture, or the aromatic spirit of ammonia, or of ether, should be administered.” The reader need not be told that a half gill of pure soft water is an ample substitute for all of the above allopathic notions.

**MONIA SCARV.**—Ingenious metaphysicians have certainly displayed more analytical than philosophical talent in giving us a list of nearly six hundred diseases of the eye? Dr. Good has reduced the formula-



be set to freedom; but I think one will answer just as well for all the forms of depraved vision which do not properly belong to the special chapter on diseases of the eye.

**Symptoms.**—In false sight or illusory vision—the only species coming within our generic definition—imaginary objects float before the eye, or real objects appear with imaginary qualities, constituting the *mirage spectra* and the *marvellous volutes* of authors. In many cases of false sight, objects appear of unusually large or small sizes, or multiplied in number; one color is mistaken for another; sparks and flashes of light appear before the eyes, &c.

**Special Causes.**—Excess of light, gloom, local injuries, as blows, bruises, congested inflammations.

**Treatment.**—But little can be done therapeutically beyond attention to the general health. Gentle friction and massage, frequently holding the eyes in cold water, &c., as in the case of weak eyes, or sore eyes from debility, are occasionally serviceable. It is especially important in all cases of depravity of the special senses, that gross, salt, and all earthy or saline matters be excluded from the food and drink.

**MUSICAL HEARING.**—Preternatural acuteness or obtuseness, or disordered perception of sound, results from a variety of inflammatory states or structural changes of the ear. But in some instances the hearing has been so low as to render the ordinary whispering, and even the respiration of persons present highly distressing, and to render real, imaginary, or illusory noises exceedingly troublesome, or as dull as to disable the patient from taking part in common conversation, without any apparent local affection of the auditory apparatus: although in most cases it is probable that a deficiency of the ceruminous secretion, or an unusual irritability or torpor, resulting from powerful moods, violent passions, &c., are the conditions on which the depravity of the function depends. In some cases of semi-paralysis, or partial palsy of the auditory nerve, the ear is only sensible of *arbitrary sounds*, when excited by louder sounds intermixed with them; and in some cases particular sounds, as the beating of a drum, the rattling of carriage wheels, the tones of a shrill pipe, the ringing of bells, &c., will excite the function and enable auditory conversations to be recognized.

**Treatment.**—Remedially, we can only attend to the secretion of the external ear, and to the general health. Frequently syringing the external meatus with warm or tepid water, followed by cold or oil, and the occasional employment of the head-bath, with a moderate douche to the upper portion of the spine, are the appropriate local measures.

**NOSE AND SENSES.**—Acrid, chronic, and chronic of smell are, like analogous conditions of the other senses, usually among the symptoms of fevers and local affections. But with some an extreme and painful loss of smell or total deprivation of the sense exists from birth. Some persons find the smell of roses, and various odors and perfumes which are agreeable to the majority, intolerably offensive and sickening. A temporary loss of smell may result from a slight cold; and a permanent deprivation or deprivation of the sense is often produced by asthma, gangrene, embolism, and poisonous vapors, as "cephalic mists," chlorine gas, cigar smoke, etc. Chronic affections, when long continued, always deteriorate the sense, and all high-seasoned dishes and complex preparations of mixed food, are especially injurious.

**Treatment.**—The head-bath, and the frequent sniffing of cold water up the nostrils, with a rigidly simple diet, constitute the special therapeutic measures.

**MOUTH TASTE.**—The tongue and palate, which is the normal state distinguish the chemical and gustatory qualities of substances, as sour, sweet, bitter, rough, styptic, saline, etc., are sometimes so influenced originally, or so perverted by disease or bad domestic habits, as to be painfully acute or morbidly obtuse; to remedy which nothing is more appropriate than frequently holding cold water in the mouth, and employing an exclusively farinaceous and fruit diet, the farinaceous part to be as simple and dry as possible, of which unleavened brown bread is the best specimen.

**MOUTH TOUCH.**—The hand, and especially the extremities of the fingers, possess the direct power of discriminating the tangible properties of bodies, although the whole skin belongs to the organ of feeling, or sense of touch; and this sense, like all the others, may be preternaturally acute, or insensible, or stony. Its principal deviations from the normal condition are known as *formication*, *itching*, *heat*, and *coldness*. The first variety is usually the result of a cold, or a symptom of fever or inflammation; the second is dependent on irritation in the stomach, bile in the blood, or imperfect depuration from the skin; and the third and fourth are caused by exercise, and aberrations of or exposure to, extreme temperature. Beyond a daily cold-bath, and attention to any particular local derangement that may chance to exist, we have nothing to say remedially, except advice a regulation of all the voluntary habits according to the laws of health.

## CHAPTER XVI.

## MENTAL DISEASES.

THE relation between mind and body is so intricate and intimate that a simple impression upon either may produce a manifestation of morbid phenomena in the other. The majority of cases of insanity, frenzy, hallucination, or mental aberration, have their origin in bodily disease; yet there are some cases in which the producing cause is purely mental. The present chapter comprises a group of maladies whose most prominent symptoms are abnormal transformations of the mental operations, irrespective of the nature of the predisposing, producing, or exciting causes. They may be arranged in tabular form as follows:

Insanity	{ Melancholy, Mania.	Revery	{ Absent-Mindedness, Mental Abstraction, Brown Study.
Uncontrollable Frenzy	{ Fury, Despondency, Hysteria.	Sleep Dis- turbance	{ Somnambulism, Sleep-Talking.
Hallucination	{ Sentimentalism, Hypochondriacism.	Fatality	{ Irritability, Idiosyncrasy.

**INSANITY—CRAZINESS.**—Nothing in the whole range of pathology is more difficult than a nosological arrangement of the abnormal states of mind; for the vast diversity of human intellect, and the varied co-existences of exaltation, depression, and mis-direction to which it is subjected by individual and social uses and abuses, make it sometimes impossible to say where sanity ends and insanity begins; while among the unquestionably insane we find every conceivable shade and degree of mental perversity, from a disproportionate activity of a single faculty or propensity, constituting a mania or an anti-manic psychosis, whose possession is merely a misfortune, to the most violent and extensive derangement of several or of all the mental powers, constituting dementia, frenzy, or idiocy.

The malady before us presents two distinct forms, which authors have ranked as species of *Insane*: *melancholy*, in which there is a total or partial hallucination, unaccompanied with extreme dejection, fear, and false apprehensions, while the will is wayward and disconcerting;

and *mania acutissima*, in which all the mental powers are greatly excited, and the discrepancy between perception and judgment general. Melancholy is subdivided into many varieties, as *gloomy melancholy*, when the patient is morose and reticent; *critical*, when he is rising and restless; *malcontent*, when he is morose or malicious, and disposed to injure himself or others; and *complacent*, when he is quiet, affable, and visionary. *Madness* is characterized as *furious*, when the patient is violent, raves, jumps, ratters, cries, shrieks, etc.; *circumscribed*, when he is gay, freely, hurried, treating in his own imaginary importance, which may make him a president, king, prophet, or the Messiah; *depressed*, when he is abjected and depressed; and *degraded or dement*, when the mind sinks into insensibility and forgetfulness, with an entire abolition of the faculty of judgment, yet possessed of unconnected and extravagant emotions, and perpetually active in acts of extravagance without object or design.

*Special Causes*.—It is natural enough that physicians, considering how few are the moral physiological principles known in the schools of medicine, should suspect some morbid condition of the brain or its appendages as the special cause of all diseases which are characterized by disorderly manifestations of the mental functions. That says Dr. Good: "Concerning therefore the remote or even proximate cause of the disease, we have yet much to learn. From the view we have taken in the present of the close connection between the mind and the brain, it seems reasonable to conceive that the results elicit a reflex action dependent upon some abnormality or malfunction of the cerebral organs; and hence every part of them has been scrutinized for proofs of so plausible an hypothesis, but without to no purpose whatever. The form of the cranium, its thickness, and other qualities; the meninges, the substance of the brain, the ventricles, the pineal gland, the commissures, the cerebellum, have all been analyzed in turn by the most skillful and prying anatomists of England, France, Germany, and Italy, but with no satisfactory result."

As well might we expect to find the proximate cause of a disorderly communication or action of the telegraphic machinery, by a chemical analysis of the wire between the batteries or at the stations, as to seek the cause of diseased mental manifestation in an analysis of the anatomical character of the brain. The nervous influence and the electric fluid will probably forever elude all attempts at material analysis.

That the phenomena of insanity immediately depend on some excess or defect, or mis-distribution of nervous influence, is sufficiently obvious; but it is difficult to ascertain the ordinary, remote, or discharging causes; these are generally strong passions, emotions, upsetting in con-



section with an organism physiologically sound. Intemperance is the most frequent cause. Glutony, self-abuse, powerful stimulants, religious excitement, grief, fear, disappointment in objects of love, ambition, or property, reverses of fortune, &c., are named by authors among the ordinary causes.

**Treatment.**—The moral management will be readily suggested by the circumstances of each case. Undoubtedly a well-ordered public asylum is the proper place for the majority of deranged amiable. But there the medical part of the management could be vastly improved. Instead of bleeding and drastic purgatives, which, as the late Dr. Briggs, of the Utica Asylum, testified, only serve to fasten the insanity upon the patient, he should be put upon a bland and simple diet, and a plan of derivative and soothing bathing. In all the appliances of water, especial pains must be taken to keep the feet warm, the head cool, and to avoid all sudden shocks or strong impressions which would produce cerebral excitement. The tepid, shallow, hip, and foot-baths are the leading processes. When the patient is manageable, the wet-sheet pack, followed by the dripping-sheet, is appropriate; but when these or any other general cold bath is employed, care must be taken to have the feet warm; if they are in the least inclined to coldness, they should be put in warm water both before and after the bath.

In our public institutions, insane persons are allowed flesh-meat, coffee, tea, condiments, and sometimes ardent spirits and tobacco—all of which is clearly wrong.

**UNGOVERNABLE PASSION.**—This affection, in which the judgment is overpowered by some predominant or ruling passion, accompanied with a marked change of the features and countenance, is seen under the forms of *ecited, depressed, and feigned or creative passion*. The divisions of the first are innumerable, as *unquenchable joy, affliction or self-conceit, pride, ambition, angry jealousy, &c.*, all of which are marked by a lively, quick, shining eye, and a flushed, turgid face. In the second variety the patient is sallow, passive, inclined to solitude, and his countenance is pale and farrowish; the ruling passion is manifested as *unquenchable love, sorrow, anxiety, longing, heartache, despair, &c.* The third variety is commonly called *half-deranged passion*, and is characterized by wayward and grotesque passion, indelicate acts of violence, and a hurried and tumultuous manner; it is usually the result of an ill-directed education.

**Special Cases.**—All the causes of insanity may be among the predisposing or exciting causes of the species of mental pravity under consideration; to which may be added debauchery, gaming, syphilis,

Somatic trouble, loss of friends, crushed hopes, love-sickness, home-sickness, impending calamities, economic disturbances, social disgrace, incurable secret diseases, bodily inequilibrium or deformity; constantly, imprisonment, banishment, penance, &c.

Treatment.—To all the remedial measures named as applicable to insanity, should be added as far as practicable, recreation, occupation, and society. Probably nothing is more refreshing to the mind or revivifying to the body, in all forms of the malady before us, than regular, steady employment in some useful calling.

HALLUCINATION.—*DELUSION*.—*ASTHIA*.—In this affection the imagination overpowers the judgment. It embraces two varieties, one of which is called *extravagance*, or *mental extravagance*; and the other is termed *hypochondriacism*, or *low spirits*. The former is characterized by romantic or fantastic ideas of real life; ardent fancy, excited and pleasurable feelings, and exalted consciousness; it embraces those forms of mental illusion, called *horns* or *chimeras*, *fancies*, *visions*, *ecstasies*, and *visions*; it other words, romantic gallantry, crush-brained wit, false inspiration, and *fascination*. The hypochondriac variety is distinguished by gloomy ideas of real life, dejected spirits, anxiety, indisposition to exercise, an oblique and scowling eye, sad and wailing countenance, with a lagging pulse, and prominent dyspeptic symptoms; it comprehends the mental states known as *rapport*, *weakness of life*, and *melancholy*, or *apoplexy*.

Symptoms.—Mental extravagance manifests every conceivable form of extravagant mis-judgment, as uncalculated acts of gallantry, rampant and unreasonable jesting, ecstasy, visions, belief in apparitions, or in some preternatural endowment, &c.

Hypochondriacism personates a thousand evils and accidents which have no existence, and imagines the most whimsical and groundless causes of disaster, as personal danger, poverty, frogs or gnats or other animals in the stomach; all sorts of diseases; one personifies himself transformed into a giant; another into a dwarf; one is as heavy as lead, and the other as light as a feather; some suspect their friends of an intention to murder them, and others suspect themselves of having murdered their friends; they are persecuted, pleased and displeased with the trivial trifles, and are often unwilling either to live or die.

Special Causes.—The first variety is often, if not generally, attributable to a superficial and unsystematic school of a substantial and useful education. Novel reading is, perhaps, the most potent and most common cause. "Periodic adventures, love-born catastrophes, the stories of angels, knights, enchanted castles, imprisoned fairies, nothing

miscredey, tiths and transmutations, and all the magnificent imagery of the same kind that so peculiarly distinguished the poets of Elmeton, became a very frequent source of permanent hallucinations." The second variety is more especially connected with indigestion and disease of the liver; and among the occasion causes are alcohol, tobacco and intemperance and stimulation generally.

Treatment.—In addition to the measures requisite to recover and maintain general bodily health, the moral or mental moderation should consist of pleasant, cheerful, and amiable company, with a light and easy, yet regular and steady business occupation, occasionally diversified by reading sound, scientific, moral, and practical books and newspapers.

Note.—Some authors ascribe displacement of the transverse colon as a cause of various forms of insanity; and the French pathologists are said to have frequently found this condition to exist, on post-mortem dissections, more especially in subjects who have died of the varieties of hallucinations called *verruit* of life and misanthropy. I am of opinion some kind of structural derangement of some portion of the intestinal tube is a much more frequent cause of mental aberration than is generally supposed. I have very often removed a less degree of the same misaffection of mind, and also many extreme cases of those forms of hallucinations termed *folie*, *mania*, *insens*, *exors*, etc., in persons suffering from a displacement of the lower bowels—prolapse of the fundus. This is generally induced by piles; piles are uniformly caused by constiness, and the ordinary dietetic habits of civilized society are exactly calculated to produce this diseased condition. Hence there is good reason to apprehend that a great proportion of those cases of mental disorder coming under the present head, are owing to disease or displacement of some portion of the digestive canal.

But I have noticed another still more frequent source of still sorer forms of "a mind diseased," and I wish to give it particular prominence here, for the reason that it is scarcely alluded to in any medical work with which I am acquainted, in connection with the general subject of insanity. I mean displacement of the uterus. The reasons already assigned show us why this readily should be of frequent occurrence among females. They are more sedentary and inactive in their habits and occupations, and hence more liable to constipation, piles, prolapsed hæmorrhoids, etc., and the general debility and relaxation of fibres often extends to the uterus and its appendages, producing prolapsus, retroversion, retrocurvature, and a variety of other local paralytic. These cases require the special treatment which will be mentioned hereafter.

**REVERIE.**—*Blasphemy of mind, mental abstraction, and dream study,* are the usual forms in which the misaffection of mind, termed *reverie*, is exhibited. They are sometimes induced by bodily infirmity, but are more frequently the acquired habits, resulting from a loose, irregular, and superficial education—an education in which the mind is stuffed with words instead of being taught to think and form ideas for itself. This, combined with reported immorality or indolence, is the principal reason why so many college-bred men of distinguished men, after receiving the highest grade of a *fiatal* education, and being “put through” a learned professor—law, physics, or divinity—in the offices of the most eminent professors, turn out woody blockheads or professional autocrats, instead of thinking men and intelligent citizens. These remarks apply mainly to the first variety of *reverie*.

It should be remarked, however, that some overwhelming passion, and intense study, especially upon the principles of mathematics and other abstruse subjects, are not infrequently causes of mental abstraction, while these causes, coupled with the pursuit of some object of ambition or exaltation, in which the mind is kept for some time in a state of distraction between hope and fear, frequently induce the variety called *dream study*—the *stadium* (sarc of Darwin).

The treatment will be readily inferred from the general principles of cure indicated in the preceding remarks.

**SLEEP-DETERIANCE.**—*Sleep-walking, somnambulism, and sleep-talking* are terms which denote the forms, and sufficiently express the nature of the chief varieties of mental disorder connected with sleep. There is in all cases an imperfect and disjoint rest, in which some of the mental powers are but partially asleep. The usual, and perhaps only causes, are an irritated or overloaded stomach, and an overexcited brain. Profound or natural sleep is never accompanied with walking, talking, or even dreaming; hence all the phenomena resulting from disturbed sleep are so many symptoms of abnormal bodily or mental irritation. Worms is the elementary cause, and diseases of the brain, are particularly distinguished by somnambulic manifestations. In some cases of somnambulism, which have been closely traced to morbid, digestive, or cerebral excitement, and cured by appropriate remedies; the mental powers have been wrought up to high intensity of power, and have solved problems too difficult for the waking state; and persons in such conditions have even been known to exercise clairvoyant powers, as in reading with the eyes shut and closely bandaged, learning and correcting coherently while entirely unconscious, etc., while the voluntary muscles, ruled by the external senses, have performed



various sorts of locomotion, as climbing, walking securely in the most dangerous places, etc., which could scarcely have been accomplished unless the "instinctive sense" had predominated over the special senses.

Our success in treating these affections will depend entirely on our skill in tracing each individual case of disturbed sleep to its particular cause or causes, and applying our remedial measures according to the principles already explained.

**FATUITY.**—The definition of this affection by Dr. Good, "defect or defectiveness of the understanding," is rather too diffuse; for some people are considerably gross to regard all others as in some way or other defective or foolish in judgment, who happen to feel, think, or act otherwise than according to their own standard of a sound understanding.

That form of mental defectiveness which is known as *imbecility*, is divided by authors into various forms, the chief of which are *stupidity*, *forgetfulness*, *credulity*, and *feebleness*; while *irrationality* or *irrationalism* comprehends those manifestations of defective reasoning faculties we call *folly* or *illusions*, *deluge* or *superstition*, and *idiotism*. Of course we must all humbly and modestly confess to some degree of some one or more of these "defectives;" but it is only when they are found to form a very prominent feature of a very small minority, that we are to name them as leaves or branches of the great order *morborum*.

*Stupidity* may arise from ignorance, from gross food or gluttony, from sickness, from intoxicating drink, from tobacco, etc. A celebrated author remarks, "Sickness in conjunction with wine and fermented liquors, has a powerful power in besotting the understanding." Forgetfulness affords many curious examples of obvious remissness. Some forget the place or street they live in; others cannot always pronounce their own name at the post-office; and instances are recorded in which individuals have forgotten their mother tongue, and been obliged to re-learn the language from the alphabet. *Credulity* may result from misdirection or original malformation; and it exhibits all degrees of *imbecility*, from a trifling gullibility to a disposition to take hold of subjects with a fervency of faith proportioned to their intrinsic absurdity. *Silliness* is sometimes a natural infirmity, and frequently the fruit of bad company and low associates in early life. *Deluge* is usually considered as a mere consequence of old age, but is generally increased or aggravated by riotous living or excessive labor, or the habitual indulgence of violent passions. *Idiotism* generally results from defective organization, or a want of that portion of the brain which exercises the reflective faculties. It may, however, be induced by a va-

sity of accidental circumstances or voluntary habit, as habitual drunkenness, excessive indulgence in stimulating pleasures, coarseness, or self-politicism, violent and protracted emotions of mind, external injury of the brain, loss of blood, &c. It has been produced by the excessive use of the lacton in females after delivery, in brain-disease, and in various forms of insanity.

*Treatment.*—So far as moral treatment can be of any avail, the principles which should regulate it have already been indicated. In relation to the medical, much may be done to alleviate or cure those cases not depending on congenital or organic causes. In general terms, the treatment should be rather of the cooling, stirring, extending kind; as the dripping-sheet, douche, shower, plunge, spongy, or constant catarrh-bath, &c., combined with active out-door exercises, or regular occupation. The diet should always be simple, bland, rather abstemious, and strictly vegetable. An individual weak, or one predisposed by organization, accident, or bad habits, to indolence in any form, should avoid flesh-meat as if it were a very hotton upon.

## CHAPTER XVII.

### DISEASES OF THE VOCAL APPARATUS.

All the diseases which make up the present chapter, have, as their most prominent symptom, some transference of the voice or speech, although some of them differ very greatly in every other particular. They may be thus grouped:

Chronic	{ Acute,	Spasmodic	{ Eklagial,
Catarrh	{ Chronic,		{ Anemic,
	{ Oedema.		{ Deaf-Deafness.
Polyph	{ Compressible,	Dissonant Voice	{ Whispering,
	{ Condignom.		{ Inmoderate,
			{ Of Polarity.
Rhinolary	{ Storing,	Dissonant Speech	{ Stuttering,
	{ Whizzing,		{ Mispronunciation.

**CAYANEN—CANTAL.**—When this affection is confined to the part

of the mucous membrane which lines the nasal cavity, it is called *cold in the head*; and when the inflammation fixes permanently upon the same membrane in the cristas of the frontal bones, it is called *cystitis in the head*.

*Symptoms*.—In the acute form there is a defluxion of serid, pellucid, mucous, or rosy matter from the nostrils, with a sense of irritation, and some degree of general fever. In the chronic variety the discharge is limpid, without acrimony or irritation, and unattended with febrile disturbance. The third variety, which is produced by an anasarca, or nasal ulcer, is denoted by an offensive, purulent, or ichorous defluxion; it is often connected with caries of the spongy bones.

*Special Causes*.—Sudden exposure to cold and damp, hot drinks, irritated diet or vapors, snuff, snoring with, wrong position, morbid salivation, often induce this disease. Some authors give us a venereal variety, owing to "the natural purities of all ages;" but I hold that any local polyp before death is entirely *anastomatous*.

*Treatment*.—The acute form requires a few packs to reduce the general feverishness, which, if the diet is rigidly stercorine, and the patient kept in a moderately warm room of uniform temperature, will effect a cure in a very few days. The chronic variety—as also does the nasal ulcer—requires a persevering employment of derivative as well as local treatment. The pack occasionally, frequently sniffing cold water up the nostrils, the hip-bath, and one or two foot-baths daily, with as much exercise in the open air—smoking, however, chilling and damp winds—as the patient can comfortably bear, comprise the remedial course.

*POLYPUS*.—Polypus tumors in the nostrils are of two kinds; the soft, or compressible, and the hard, or cartilaginous. Both are probably morbid growths of the mucous membrane, although the latter variety is generally connected with caries of the ethmoid or inferior turbinated bones.

*Symptoms*.—Nasal polyp present the appearance of fleshy, elongated excrescences, attached by a slender neck to some part of the Schneiderian membrane, extending in different directions, and affecting the speech by obstructing the nasal cavity. The soft kind is unattended with pain; its color is a pale red, having some resemblance to a common oyster; and it generally shrivels in dry and enlarges in wet weather. The hard polypus is firm, of a highly red or dark color, progresses gradually without alternate diminution and enlargement, and causes pain, with a very disagreeable sensation in the nostril and forehead, on coughing, sneezing, blowing the nose, &c.

**Treatment.**—In the early stage frequent bathing of the coldest water will often arrest the tumor. When it becomes troublesome from bulk, colarization is necessary.

The solid kind may be removed with the ligature or forceps; the latter is generally the most convenient method. The hard polypus cannot always be washed with without endangering the life of the patient. When attached to or connected with the spongy bases, these may be removed by a skillful surgeon.

**DISCUSSION.—HAYTUNG IS THE THREAT.**—Sneezing and sneezing, which are the chief manifest of this affection, are symptomatic of other diseases, as apoplexy and asthma, or of gross feeding, a plethoric habit, corpulence or obesity, or of an obstructed skin, by which the lungs are oppressed with vicarious faty, or of stony or debility of the visceral muscles, which are important agents in the respiratory movements. The cure will be found in a restoration of that equilibrium in the bulk and action of the bodily organs and functions which is correctly termed health. Dr. Good recommends "taking off the obesity," in fat persons, "by repeated venesections, active purgatives, vigorous exercise, and a low diet." I will guarantee a perfect cure in every case of obesity on earth, by proper exercise and diet, save all the bleedings and the purgatives.

**STUTTERING.—APHASIA.—DUMKISS.**—Inability of speech may result from distortion of tongue—and this may be congenital or accidental—constituting the lingual variety; or from paralysis of the nerves of the tongue or pharynx, in consequence of some violent injury or shock, forming the atonic variety; or from congenital deafness, or deafness acquired in early life, making the variety called *deaf-dumbness*.

**Special Causes.**—When the inability is not organic, its most frequent causes are severe and protracted colds; violent shocks, as of lightning or electricity; vehement emotions, as of terror, anger, fright; narcosis; morbid exhalations; poisoning from eating mushrooms, and sometimes shell-fish; metallic vapors; mercurial medicines, etc. There are also many cases of partial or complete loss of voice, the cause of which is almost always overlooked or unthought of by the attending physicians. I mean cases of weak voice resulting from mere debility of the muscles of the larynx and pharynx. In these cases there may be a moderate degree of general health, with an extreme relaxation or rigidity of these muscles, so that the balance of action between them, the diaphragm, and the laryngeal muscles, is lost; the diaphragm distending when it should ascend, and vice versa.



**Treatment.**—We have no special remedial measures in the majority of cases which depend on invariable malformations or structural lesions; nor can we in the majority of cases dependent on functional derangement, do more than attend carefully to the general health, trusting nature for the local inclination. In that form, however, dependent on muscular debility, we can invigorate the affected muscles by the wet cataplasm, frequent lip-baths, various manipulations, or kneading, pinching, kneading, and a variety of exercises which call the weakened muscles into vigorous play, as dancing, jumping, riding a hand-missing-horse, and vocal gymnastics, as reading, speaking, and declaiming by the elementary sounds of the letters or words, etc.

**DIFFICULT VOICE.**—The chief depictions of voice have been ranked under the heads of whispering, in which the voice is weak and scarcely audible; inmodulata, when it is habitually rough, nasal, squeaking, whizzing, guttural, or pulsative; and the irregularly alternating harsh and shrill voice which is peculiar to the period of puberty.

**Special Causes.**—The last named variety can hardly be regarded as a disease, save when complicated with some accidental abnormality. The other varieties are caused by most of the circumstances which produce the static loss of voice, to which may be added over-exerting the vocal apparatus, as in loud speaking or singing, or in straining the voice while the bodily attitude is crooked or distorted, or when the glottal muscles are so weakened that the main effort at expiration is thrown upon the muscles of the throat, chest, and diaphragm. Indeed, a wasting of the respiratory muscles, or in other words, a vicious habit of exercising the voice in early life, which has its origin in bad training or bad health, is the most common cause of inmodulata, strident, and unpleasant voices in after life.

**Treatment.**—The special management in all forms of voice wherein there is no "cessant of sweet sounds," consists, in addition to such appliances as particular complications may demand, in a regular system of voice-training or vocal gymnastics. Ordinary ingenuity will suggest a thousand variations of the general plan to suit individual cases; but this general plan is, 1. An erect bodily position; 2. Opening the mouth freely and fearlessly in every attempt to read or speak; 3. Reading and speaking slowly, and pronouncing every syllable distinctly, and even giving every letter its full and appropriate sound; 4. Pronouncing the different elementary vowel and consonant sounds of our language, at first slowly, and then as rapidly as possible, taking care to utter every sound distinctly enunciated; 5. Hallooing with a full prolonged sound, as by the wood over; 6. Laughing by pronouncing

ing *hah-lah-lah* as rapidly as possible, observing that the abdominal muscles contract—that is, spring out, as it were—at every exhalation; 7. Deciding on the new state is the face of a strong wind, with pebbles in the mouth, as in Demosthenes, etc.

**DISONANT SPEECH.**—Stammering has been called a sort of St. Vitus's dance of the vocal organ. Its principal varieties are called *hesitating*, in which there is an involuntary and transient retardation in the articulation of peculiar syllables; and *stuttering*, which is an involuntary re-pro-nunciation of some syllables or words, alternating with a hurried and convulsive pronunciation of those which follow.

*Mispronunciation* is that form of imperfect speech in which the sounds are articulated freely, but inaccurately pronounced; the principal varieties of this affection are vicious or incorrect pronunciation of the letters *r* and *l*; substitution of soft for harder letters; multiplication or omission of initials, or exchanging them for other letters; mis-employment of dentals, and mispronunciation of gutturals.

All of these errors and imperfections of voice are sometimes the result of organic malformations; occasionally, as in the case of stammering, of a constitutional irritability of some of the tissues concerned in articulation; more frequently of a want of correct education; and still oftener of a careless or depraved habit; and even in some cases of an exceedingly silly affectation. Many stammerers who talk with great difficulty, read with great facility, and all of them stammer least when they undertake to speak most deliberately, and least when their attention is so engaged with the subject that they think nothing about picking out single words, or arranging sentences with a view of obviating the infirmity of speech.

**Treatment.**—All that has been said in relation to the vocal treatment of the preceding disease, applies with equal force to this. The stammerer cannot well be too slow and deliberate in his voice exercises, nor should he attempt such conversation while under the remedial discipline, and he must exercise also the mental qualities of firmness and perseverance. Every expedient which he can devise to expand the lungs and augment their ventilative capacity, will facilitate his improvement; as, for example, deep, full, and prolonged inspirations and expirations, during which he may to advantage count *one—two—three—four*, etc., taking pains to open wide the mouth, and “speak loud and plain” each word which he attempts to utter. The various forms of mispronunciation, besides the vocal exercises herein intimated, could with propriety be referred to a judicious course of lectures on elocution, but would the lessons of the singing master be without value.

## CHAPTER XVIII.

## DISEASES OF THE SEXUAL FUNCTION.

THE integrity of the function whose morbid affections we are about to consider, in its importance to the progressive improvement and well-being of the human race, cannot be over-estimated; yet, unfortunately, with regard to several diseases comprised in the present chapter, we have to regret, as in the case of several preceding maladies, that they are alarmingly on the increase. This is especially the fact in regard to those female diseases known as menorrhæmia and prolepsis—diseases of rare occurrence in the days of our grandmothers, and then scarcely known, except in the married relation; but now prevalent among all classes and all ages of females save mere infancy. These complaints are attributable to four general classes of causes; solitary habits, concentrated and stimulating food, exerting drinks, and unphysiological dress; and as the refinements, and luxuries, and bad fashions of society increase, these natural and necessary consequences must extend correspondingly.

It is a painful reflection, too, on the popular medical system of the day, that its professors, who claim to be the conservators of the public health, content themselves with dosing and dosing, bleeding and poisoning, and talking technicalities to this class of invalids, instead of teaching them how to live healthfully. Soundness and purity in the reproductive organs are indispensable to a perfect and vigorous organisation in the offspring of sexual intercourse; and if mothers and daughters could be imbued with the right moral principles and physiological truths, there would soon be an end to these artificially produced, but not the less afflictive and lamentable disorders, which are presented in the following tabular arrangement:

Menorrhæmia	{	Obstructed Menstruation—Anemorrhœia,
		Laborious Menstruation—Dysmenorrhœia,
		Excessive Menstruation—Hæmorrhagic,
		Virgineous Menstruation,
		Irregular Cessation of the Menstrue,
		Chlorosis—Green Sickness,
		Leucorrhœa. Spurious Menstruation.

Venereal Diseases	{ Syphilis, Gonorrhoea, Chancr.	Locomotor { Syngonism, Lues { Symplicism.
Genital Displacement	{ Protrusion, Adversion, Retraction, Inversion, Eversion.	

**Menstruovivus.**—The catamenial secretion may be vitiated in its discharge, laborious and painful at the usual period, excessive in quantity, vicarious in its locality, irregular in its final cessation, or attended with general derangement of health at the period of its first appearance, which several circumstances constitute the several species of the disease before us.

**Symptoms.**—*Obstructed menstruation*—the emmenorrhoea of authors—is distinguished into *retention* when the menstrual flux is obstructed at the period of its accession; and *suppression*, when the obstruction occurs regularly at the usual periods of recurrence. The former variety is characterized by an insidious swelling of the feet and ankles at night, and a swelling of the eyes and face in the morning; the latter is attended with leucorrhoea, difficult breathing, and palpitation. Both varieties are attended with general languor and many dyspeptic symptoms, particularly a capricious appetite, and not unfrequently a longing for innoxious and injurious substances, as clay, slate-stone, charcoal, &c. In many cases there is a hoarse cough, with symptoms of a general decline.

In *laborious or painful menstruation*—*dysmenorrhoea*—the flux is accompanied with great and sometimes excruciating pain, not unlike the bearing-down pain of labor, generally attended with some degree of actual hemorrhage, and frequently with an expulsion of fragments of a membranous excrement, like that of cramp or trismus diarrhoea. In some instances this membranous concretion is thrown off from the entire surface of the uterus at once, in the shape of a small bag filled with a fluid which has been mistaken for an early abortion.

In *excessive menstruation* the catamenial secretion is excessive in quantity, and attended with an actual hemorrhage from the menstrual vessels. The hemorrhage is known by the fact that the fluid discharged is coagulable, which is not the case with the pure catamenial flux. It exhibits two varieties, in one of which the discharge is excessive, from too frequent recurrence, and in the other from too copious a flow at the proper menstrual period. The ordinary flux may be from four



to six weeks, but it is subject to much diversity, and can only be regarded as morbidly in excess when accompanied with marked symptoms of general debility, as paleness, cold extremities, coldness of feet, fatigue on slight exercise, &c.

Puriform menstruation is characterized by a transfer of the uterine secretion to a more distant part or organ. The eyes, nostrils, ears, sockets of the teeth, nipples, stomach, lungs, rectum, bladder, and abraded or ulcerated surfaces, have been the seat of the transferred flux.

The irregular cessation of the menses, at the term of its natural cessation—usually called the *term of life*—which in the female is, on the average, at about the fifty-fifth year, is accompanied with symptoms of various pregnancy, dropsy, or glandular tumours; the menstrual discharge is irregular; sometimes profuse with long intervals; and at others trifling in quantity, but returning every ten or twelve days, and often succeeded by leucorrhœa.

Chlorosis, or green-sickness, though elevated to the rank of a generic term by some authors, is merely a condition of imperfect or deficient menstruation, occurring about the age of puberty, and complicated with so great general debility that the sexual power or propensity is partially or completely lost. The nurse is deprived from the pale, livid, and greenish cast of the skin, which all chlorotic patients manifest more or less.

*Special Causes.*—In addition to the general causes already intimated, menstruation may be induced by repeated colds, especially from an exposure of the feet while the rest of the body is well clothed, protracted anxiety, grief or fear, local injury, wantonness, excessive venereal indulgence, repeated miscarriages, &c. Retention of the menses is sometimes owing to an imperforate hymen, requiring for its cure a transverse section of the membranous obstruction.

*Treatment.*—Fortunately almost every form, state, and stage of menstruation is curable by the judicious application of our whole system. The majority of cases, however, require several months' and many of them two or three years' treatment to accomplish the cure. In fortunate, again, those cases which require a long treatment, can be managed mostly at home, and with very little expense or neglect of ordinary duties or labors. The general plan applicable to all forms of the disease except excessive menstruation is, a morning full-bath, as the plauge, dripping-sheet, or towel-wash, two or three hip-baths daily, one or two foot-baths, the abundant bandage, frequent and varied outdoor exercise, and a plain, solid, rather dry, and non-irritating diet. The water should in all cases be as cold, yet no colder, than is followed

by quick reaction and a considerable glow; and, as a general rule, short baths, frequently repeated, are more efficacious than long ones with greater intervals. Hot and foot-baths should always be preceded and succeeded by some yet not exhausting exercise, and the walking foot-bath, when practicable, is always to be preferred. A great variety of exercises can be advantageously employed, as walking, riding, jumping the rope, dancing, shuttle-cock, games, &c. And those who can find the most recreation and entertainment in light work, as sweeping, dusting, spinning, washing dishes, picking berries, walking the roses, &c., will find exactly the same remedial effects as those arising from agreeable plays.

When the body is full, sanguine, and plethoric, the wet-sheet pack should be employed daily or tri-weekly for a month or two; and when the whole system is in the opposite condition, called *stark*, *anæmic*, *typhic*, &c., the tepid shallow bath, followed by active and prolonged walking, should be substituted. In cases of extensive metastasation, the hip-baths should be colder than in either of the other varieties, generally from 55° to 45°. In the variety, *irregular cessation*, care must be taken not to disturb the circulation with any powerful shock; the treatment in the main should be mild, the water generally tepid or but moderately cold. The exercise, too, in the last two varieties, should be very moderate.

Vaginal injections are useful in all cases attended with considerable relaxation, hæmorrhage, or leucorrhœa; while in all other functions, the horizontal douche or spray, applied to the hips, abdomen, and loins, is a valuable auxiliary.

When the catamenial periods are attended with much pain, as in dysmenorrhœa, warm applications must be employed until relief is obtained, after which the regular treatment may be resumed. These should consist of the warm foot-bath, warm sitz-bath, hot fomentations to the abdomen, the full warm-bath or even hot-bath, followed by the dry pack, according to the severity of the pain. In some cases the pain is agonising for one, two, or three days, and the only salutary condition for the patient is to remain dry-packed, or closely covered up in bed, so as to keep the body warm and perspirable until the secretion takes place. Drinking warm water very freely often proves violent and useless in these cases.

The propriety of suspending a part or the whole of the treatment during the menstrual period, not only is the complaint before us, but in all cases, is somewhat unsettled in the code of hydropathists. Some practitioners, at least in all ordinary cases, pay no regard to the monthly flux, while others suspend all active or very cold treatment. It is true

the menses are frequently partially suppressed or wholly suspended for several months by the former practice, yet it seldom happens that any permanent injury ensues from it. My own opinion, derived from considerable attention to the practical point under consideration is, that patients who are not much reduced in flesh, blood, or temperature, can take full treatment through the catamenial disturbance, not only without injury, but often with benefit; but that those who are emaciated, pale, and cold, with torpid livers and chapped up skins, and a tendency to headache or "rush of blood to the head," will be better off to take no treatment, save a tepid wash-down daily, and such local soothing appliances as particular exigencies call for, from the first decided indications of the menstrual effort, until it has nearly or quite subsided. There are few diseases in which regimen should have a greater prominence among the curative measures. With respect to water-drinking, I have always recommended those of full habit and well expanded lungs to drink rather freely—four, six, or eight tumbler daily—and the thin and feeble to take two or three tumbler in the fore part of the day, and at other times only according to actual thirst. The diet cannot well be too strict, and as constipation is almost always connected with menorrhagia, it should have especial reference to this circumstance.

Brown bread, unfermented bread or cakes, cracked wheat or rye meal mush, with a moderate allowance of the best vegetables and good fruits, constitute the best dietetic plan. Very little animal food, if any, should be taken, and even eggs, butter, and milk, had better be avoided.

**Leucorrhœa.**—This disease is indiscriminately called *flux albus* and *whites* in medical books. It affects more or less nearly all females who are the subjects of menstruation, and sometimes exists antecedently, and at others subsequently to the menstrual period of life. It is most frequently the immediate result of kind abortion. It has been for a long time, and is yet a question among medical authors, whether the disease is ever infectious, and communicable to the male creature by the act of cohabitation. Two years ago, a "professor of diseases of women and children," in one of our city colleges, and an ex-professor of the same branch in another orthodox school, were called upon in a court of justice, to give testimony on this very point. The latter professor testified that he had actually known such infection to result from leucorrhœa, in his own euphistic language, "again, and again, and again;" while the former declared that he did not believe it was possible! Both medical gentlemen, of course, swore conscientiously. It is a general law in pathology—so general that I believe there are no exceptions—

that all abnormal secretions are bland or acrid, precisely according to the less or greater *grossness* or *rapidity*, or *inflammatory condition* of the general system; all morbid discharges from mucous surfaces may become, as it often seems in the case of curutch or scyala, so irritable as to excoriate the surface wherever they come in contact with it; and the mucous surface of the vagina may readily, under circumstances of extreme irritation and high inflammatory excitement, secrete an ichorous or infectious matter, which will produce in the male urethra a running analogous to gonorrhea or gleet, though, of course, not so violent nor inflammatory as in true gonorrhea, nor infectious like it. I have known cases of this kind under such circumstances as precluded all idea of impropriety on the part of the wife, by whom the husband became diseased. These facts might be well ascertained by the practitioner, so that the woman, though she may not be an example of strict personal cleanliness, may be exempted from the charge of moral impurity.

**Symptoms.**—The discharge is usually of a yellowish-white color, verging to green; but sometimes it is brownish, or slightly red, varying in consistence from a thin limpid fluid, to a thick, tenacious,ropy mass. It is usually accompanied with weakness or pain in the back, and some degree of "spinal irritation;" when of long standing, it is attended with a sense of heat, and itching or smarting; and in still more advanced stages, the discharge is highly acrid and offensive, often excoriating the whole surface of the vagina.

In the form called *leucorrhœa*, the discharge is thin and tinged with shew of blood, and is only regarded as morbid when excessive. The whites of advanced life generally appear soon after the cessation of the menses; the discharge is thin, acrid, fetid, and excrement, and is sometimes combined with insipid cancer or polypus.

**Special Causes.**—The same general range of morbid influences which predispose to, or excite menstruation, contribute to the production of leucorrhœa, to which may be added mechanical injuries and irritations, as pessaries, repeated coitions, voluptuous excitement, and masturbation.

**Treatment.**—Dr. Good remarks, in relation to the drug-treatment of leucorrhœa, "The general remedies which have been had recourse to are almost innumerable;" a sufficient acknowledgment that they have generally proved either useless or injurious. The general hydropathic plan of medication is the same as for menstruation. The local treatment requires more especial attention. Hip-baths and vaginal injections are always among the leading resources, and the temperature of the water for either purpose need be regulated by the condition of



the patient. In some cases the diseased surface is so irritable that quite warm water proves the most available relief. It is always safe and generally necessary to commence these baths with water at 80° or 90°, and gradually reduce the temperature to 60° or 70°. The vaginal syringe in severe cases should be employed two, three, or four times a day. Whenever the discharge is excessive and blood-colored, indicative of actual hemorrhage, very cold water should be thrown up the vagina, and cold wet cloths laid over the abdomen.

**SPERMATORRHOEA.**—Sexual excitement, or an involuntary flux of the seminal fluid without copulation, is often the result of lascivious ideas, especially if in this case is added the irritation of a gross or highly animal diet, or the still more inflaming and exciting influence of wine, coffee, etc. Not infrequently the gross and deluding habit of self-pollution induces such a degree of nervous exhaustion and morbid irritability, that the emission takes place on the slightest lascivious excitement; and sometimes a thin, degenerate, mucus-tinged secretion occurs spontaneously during a dreamy or even a profound sleep.

**Treatment.**—When the general health is fair, and the patient has not been guilty of a dissipated life, one or two daily cold baths, active out-door exercise, or what is better, regular and laborious occupation, and a plain vegetable and fruit diet, will speedily effect a cure. In constitutions worn down by previous diseases, exhausted by nervous flogging, or undermined by chronic masturbation, the case requires a strict and persevering observance of all the laws of hygiene, that the patient may out-grow rather than derive out his various vices. Unfortunately, however, there is no class of patients more feeble, vacillating, and unreliable; the mind partitioned of the bodily degeneracy, and it requires a combination of rare and favorable circumstances to keep them from relapsing after every touch and whimsical impulse which tortures torture them with a single bottle of letters, which, moreover is "pleasant to the taste."

These patients seldom need very active or very cold water-treatment. A daily tepid-bath, one or two tepid or moderately cold hip-baths, and a rightly simple and staid diet, afford the best chance of recovery. Salt, sugar, and even milk can be improved with in advantage. The evening meal should always be light and as dry as possible, and the patient should avoid sleeping on the back, the preferable position is bed being a gentle inclination to the side.

**VENEREAL DISEASES.**—The affections of the genital organs which result from lacerate sexual intercourse are among the most distressing

in appearance and the most deplorable in their consequences that afflict degenerated and erring mortals.

*Symptoms.*—Venereal affections appear in two distinct forms, *sypphilis*, or *pain*, and *gonorrhea*, or *chlop*. The first is a constitutional disease, or, rather, may become so; the second is always a local disease, never extending beyond the genital organs or glands of the groin. Both diseases, however, may coexist in the same individual, and be re-excited at the same time. *Gleet* is simply a catarrhal running; and, though often a sequet of gonorrhea, may exist from irritation unconnected with venereal taint, and be excited by stress on the bladder, leucorrhea, and various other causes. These distinctions are important to keep in mind, for themselves have their constitutions varied by a long mercenary course for gonorrhea, on the mistaken notion that the disease was in the blood or general system. It should be remarked, too, that *sypphilis* never affects the constitution until after the formation of an ulcer and the absorption of its matter.

*Sypphilis* commences with one or several small pimples, or *chancres*, on some part of the genitals, which gradually fester, and finally terminate in spreading or deepening ulcers, filled with an exceedingly acrid and corrosive matter. If this matter is allowed to be absorbed, the glands of the groin swell into hard tumors, called *buboes*, and often *abscesses*. Eventually the whole body becomes contaminated with the virus absorbed from the chancres, and what are called constitutional or secondary symptoms appear, as festering ulcers in the throat and palms, livid and copper-colored spots on the skin, or discharging sores, inflamed eyes, pains, swellings, and caries of the bones, &c.

*Gonorrhea—discharge from the urethra*—consists in a mucoid and virulent discharge from the urethra or vagina, attended with a burning pain in passing the water, and considerable, sometimes violent pain, heat, and swelling of the part affected; in some instances the inflammation extends to the glands of the groin, producing *buboes*.

*Special Cause.*—Venereal disease may be generated by promiscuous sexual intercourse, and when produced, the peculiar virus thus developed is capable of propagating the same disease by contact.

*Treatment.*—The ulcer or chancre should be destroyed by fire or caustic as soon as it makes its appearance. *Aqua fortis* or *lunar caustic* may be employed for this purpose. When the ulcer has already spread over a large surface or corroded deeply into the flesh, its virus may be destroyed by repeated applications of a strong solution of the caustic or diluted *aqua fortis*—one part to six of water. In all other respects both forms are to be treated as ordinary local inflammations. The proper temperature of the water for sitz-baths, which should be fre-

quently employed, will vary greatly in different cases; but in all cases the temperature is to be preferred which produces the most sedative or soothing effect. In some cases the morbid irritability is so extreme that cold water aggravates, while warm or very warm quells the irritation, and relieves the pain and irritation at once.

**INFLAMMATORY LEUCŒ.**—We need not dwell long on this affection. Authors have applied the term *erythema* to an ungovernable sexual passion in the male; and the term *symplicum* to a similar propensity in the female. They are both produced by some local irritation, which may turn its axis in the general mental or physiological habits of the individual. The most frequent combination of causes which operates to produce a state of leucœous fever is, gross high-seasoned food, intoxicating drinks, indolence, and personal uncleanness—in other words, intemperance to bathing.

These views of the causation of the disease, are supported by the fact that it is more common in advanced life, even beyond the "three scores and ten" period, than in youth or middle age. The cure will readily be found in frequent general cold baths, copious water-drinking, active exercise or occupation, warm relaxing hip-baths, and a simple vegetable diet.

**GENITAL DISPLACEMENTS.**—The true pathology or precise condition of these affections is but little understood by the medical profession, as is apparent from the general ill-success attending the ordinary treatment. The term *prolapse* is used indiscriminately for all degrees of simple descent, or *falling of the womb*; but in some books the term *relaxation* is applied when the descent is only to the middle of the vagina; *providentia*, when the uterus descends to the hilt; and *prolapsus*, when it protrudes externally. *Retraction* is that form of displacement in which the fundus uteri descends toward the vagina, the os uteri or neck of the womb inclining toward the pouch. *Adversion* is the reverse of the preceding, the fundus falling forward and the os uteri inclining backward. In *inversion* the organ is turned inside out which is a state of prolapsus. In some cases the upper part of the vagina protrudes into the lower, constituting what is called *prolapse of the vagina*.

**Symptoms.**—*Prolapsus* of the uterus is attended with a heavy, disagreeable, or painful dragging-down sensation at the lower part of the abdomen, sitting or weakness about the small of the back, and when severe, great difficulty or inability in walking. At first there is in-

various mucous secretions, which increases by degrees until it acquires the character of an obstinate leucorrhœa.

When the uterus is retroverted the bowels are irregular or constipated, and from the pressure of the displaced organ on the rectum below and the vesicles is lost, there is more or less difficulty experienced in expelling the contents of the bowels and bladder. In this situation the womb often becomes congested, inflaming, and enlarged, and every attempt at walking is exceedingly painful or exhausting. In bad cases the patient can only endure a fixed, quiet, almost recumbent position in her chair or bed. There is, too, usually, considerable tenderness and tension of the whole abdomen.

*Ischuria* is a less frequent occurrence; it is denoted by difficulty in walking, sense of weight or fullness in the pelvis, with every of the symptoms of prolapso, and is attended with much less difficulty in evacuating the urine and feces than *retroversion*.

*Ischuria* is caused by the organ hanging down externally; it is usually the result of violence in extracting the placenta, but may occur from an adhesion of the placenta, or from polypus uteri.

In some instances the falling down of the uterus or vagina drags along the bladder with it, constituting what is called *complicated prolapso*. In this case the bladder, being deprived of the expulsive aid of the abdominal muscles, is incapable of evacuating its contents without artificial assistance.

*Genital carcinoma* consists in polypus or other tumors, issuing from the surface of the uterus or vagina. They are of all sizes and of various degrees of consistence, from the softness of sponge to the firmness of leather.

*Special Cause*.—Although medical authors and professors of midwifery are continually talking about "relaxation of the ligaments" which hold the uterus in position, as the main cause of its displacement, it is quite clear that this relaxation has nothing whatever to do with it; the yielding or elongation of the ligament being itself an effect of the displacement. The natural supports of the uterus are the vagina and the abdominal muscles; if the former is greatly relaxed the uterus will descend, and the ligaments, being kept constantly on the stretch, will finally elongate more or less; and if the abdominal muscles are greatly debilitated, they do not contract vigorously, so as to keep up equable and uniform compression in all the various positions of the body, hence the uterus is liable to fall forward or backward, or incline laterally; and when both are badly relaxed and debilitated, we find both conditions of displacement—falling down and tipping transversely across the pelvis. In corroboration of this view of the subject, I may



about is the fact, that all the cases of uterine displacement we meet with in practice, with the single and rare exception of such as are produced by violence, occur in females who suffer from the very circumstances which are most efficient in inducing muscular relaxation of these parts, as overindulgence, piles, dyspepsia, nervous debility, immobility, shortness of menstruation, protracted labor, etc.

*Treatment.*—How important for good, and how potent for evil, are all the various rheological and drug-shop applications for the management of these cases, may be inferred from the preceding explanation of their nature and proximate cause. Poultices laudanale have been invented, trusses, braces, and supporters of all sorts and shapes have been contrived, and blisters, issues, and caustics, of every kind, have been resorted to, while many times the miserable sufferer has been kept confined to a fixed position in bed for six months or a year, all intended to aid, force, and tug the "relaxed ligaments" into contraction, but which have, in nearly all cases, operated greatly to the disadvantage of the relaxed muscles, and thereby greatly aggravated the difficulty.

A rational medication will abjure all these "evidences of mechanical and surgical skill," and regard, first of all, the general health. All the resources of hygiene must be discriminatingly adapted to each individual case. No class of patients require a more rigidly simple and abstemious diet. I have had many patients confuse themselves for weeks to brown bread, baked potatoes, and baked apples, or even plain as simple, and always with the best results. Nothing will compare more to being about a firm, energetic, contractile state of the whole muscular system. If a strict diet is adopted, very little water-drinking is necessary. The bathing part of the treatment must in general be moderate, for the reason that most patients can take but little exercise. A daily tepid dripping-sheet or full-bath, with one or two tepid hip-baths, a full-bath in the evening, with two or three vaginal injections daily, of as cold water as can be borne without shock, is the usual combination of baths which are most serviceable in these cases. To those I would always add occasional packs when the patient has a good degree of reactive power or superficial heat and circulation. As in all other cases, the patient should exercise according to ability; but in bad displacements very little can be done in this way until the uterus is restored to its natural position. This must be done mechanically, when the ordinary natural means fail. The os uteri must be forced and elevated, or drawn backward or forward, according to the kind of displacement. While the uterus is in position, the abdominal muscles must be strengthened by active yet gentle manipulation, and the re-

fixed there if the vagina constricted by spasm of a small quantity of very cold water. The patient should commence walking, or perform her usual amount of exercise, as soon as the organ is replaced, and gradually raised the exercises or gymnastics, as the muscular strength improves. When the uterus is inflamed and enlarged, and the pain violent and tender, the replacement should not be attempted until these symptoms have been partially subdued by the treatment. In some cases an appropriate instrument is necessary to effect the replacement, and when the vagina is extremely relaxed, the uterus will have to be supported with a piece of soft sponge inclosed in a flexible capsule of India rubber, until the requisite muscular contraction can be induced.

The inverted uterus should be restored as soon as possible after the accident which induced it, or its contraction will render the operation impossible. The treatment of the various varieties comes within the province of the surgeon; and of the various operations proposed for its removal the ligature is the best.

## CHAPTER XIX.

### DISORDERS OF THE URINARY ORGANS.

THE various forms of inflammation, which consist in morbid secretion or discharges of urine, are:

- Detention of Urine—Suppression.
- Retention of Urine—Ischuria.
- Painful Urination—Strangury—Dysuria.
- Saccharine Urine—Diabetes.
- Incontinence of Urine—Enuresis.
- Unassisted Urine—Urinary Discharge.
- Erratic Urination—Vicarious Urination.
- Urinary Calculus { Gravel.  
Stones.

Detention of Urine.—In this affection the urine is not secreted by the kidneys; there is no irritation of follicles or granulations in the bladder, nor any desire to urinate. The excrementitious elements of the renal secretion are more or less thrown off by the other excre-

tries, but not sufficiently to prevent great constitutional suffering, arising by general torpidity, apoplectic symptoms, &c. Most of the subjects of this complaint are fat, corpulent persons, considerably advanced in life, and the disease generally proves fatal in a very few days.

**Treatment.**—To relieve the blood as far as possible of its urinous accumulation, the wet-sheet pack and dripping-sheet should be employed; while the action of the kidneys should be excited by the alternate hot and cold hip and foot-baths, or better still, perhaps, the warm decoction followed by the cold to the loins and abdomen. The bowels should also be moved by copious injections.

**RETENTION OF URINE.**—In this disease the urine is duly secreted, but its flow is interrupted by spasm, inflammation, calculi, tumor, stricture, abscess, coarctions in the rectum, distention of the vagina, or debility or palsy of the bladder itself. A frequent cause is over-distention of the bladder in consequence of holding the water too long, when it has been inconvenient to void it. This condition is always attended with pain, prostration, and a frequent desire to urinate.

**Treatment.**—In most cases a hot hip-bath, or hot fomentation to the abdomen, followed by a dash of cold water, will relieve; but if they fail, the catheter must be promptly employed.

**PAINFUL URINATION.**—*Strangury*, or a painful and dribbling discharge of urine, may result from several of the causes of the preceding malady; but generally it is excited by acid food, drinks, or medicines, particularly camphires, or Spanish flies, and is attended with a scalding sensation. It is also occasioned by a stricture, or edema thickening of the lining membrane of the urethra, in which case the secretion is extremely troublesome and distressing, the straining often causing the bowels to reject their contents at the same time.

**Treatment.**—These cases are generally relieved by copious water-drinking, and warm hip-baths; in severe cases the full warm-bath may be necessary.

**SACCHARINE URINE.**—*Diabetes*, termed water-far, or *urinal dropsy*, by the authors, consists in a free or profuse discharge of urine, of a ruddy smell, and generally of a sweet taste, attended with great thirst and general debility. Medical writings are full of speculations as to the nature and proximate cause of the excretive matter or sugar which is sometimes found in very large quantities in the urine of diabetic patients; but as they shed no light on the subject, they are hardly worth

our attention and limited space. The most important fact they have made us acquainted with is, that the skin is always in a condition of ex-  
haustion.

**Treatment.**—This disease has terminated fatally, with very few exceptions, under allopathic treatment. Instead of doing the kidneys or stomach, as has been and yet is the custom of the drug-doctors, we should direct our main efforts to restore the cutaneous function, which is, in fact, the only way to take off the excessive dermatisation in, and irritation of, the kidneys. When the skin is cold, pale, and bloodless, the tepid dripping-sheet, followed by the dry pack as in the prostrato moderate perspiration, and the full or shallow-bath, followed by the dry rubbing-sheet, with thorough friction to the whole surface, are the leading measures of treatment. Water may always be drunk to the extent of thirst, and the diet should be mainly farinaceous, and the articles principally dry or solid, as wheat-meal biscuits, brown bread, roasted potatoes, Graham crackers, etc.

**INCONTINENCE OF URINE.**—*Enuresis*, as the present form of morbid urination is generally called, is a frequent or perpetual discharge, with difficulty of retaining the urine. It is variously occasioned by an acid quality of the urine, local irritation, atony or debility of the sphincter of the bladder, and a superabundant secretion. The remote causes are chiefly hot drinks, drastic drinks or medicines, stimulating liquors, etc. The plan of cure is the same as for the preceding disease, especial care being taken to avoid, correct, or remove the exciting cause.

**UNASSIMILATED URINE.**—In this affection the urine is impregnated or colored with various alimentary or medicinal articles which have been taken into and later found their way to the kidneys, and through the bladder, unchanged. Kina-kina, peruvian bark, and other drugs pass rapidly to the kidneys without undergoing decomposition; and those articles which are called diuretics are carried to the kidneys directly without going the rounds of the circulation. In some cases of impaired digestion, the urine is impregnated with a matter resembling chyle. This affection is but an "effect of cause" in the body of extraneous ingredients; and hence copious water-drinking, a strict diet, and a daily bath are all the remedial measures which seem to be indicated.

**EMATIC URINE.**—A tenuous discharge of urine at some foreign outlet is not an infrequent occurrence. It is an evidence of the vis medi-



urific action, to deterge the blood of its urinous elements when some obstacle prevents their expulsion at the usual excretory, or when from stasis or disease of the kidneys it is not secreted at all. In such cases a urinous fluid has been evacuated by the stomach, bowels, skin, salivary glands, ears, eyes, nostrils, breasts, sweat, and at several surfaces and fetidous openings. The medication is the same as in the preceding diseases.

**URINARY CALCULI.**—Accumulations of calculous matter in the urinary cavity, are either *renal* or *vesical*, as they are found in the kidneys or bladder. *Renal* calculi comprehend the various forms of urinary sand or gravel; and *vesical* calculi constitute the various kinds of stone.

The chemical elements of these excretions are urea, uric acid, lactic acid, sulphates, hydrochlorides, and phosphates of potash, soda, and ammonia, and various other occasional ingredients. The most common form of urinary calculus is that called the *lithic* or *uric acid*, consisting of urea with some free acid and ammonia.

The *calculus of lime*, called also mulberry calculus, is the next in frequency; and the other most frequent varieties are the phosphate of lime and ammonia, and phosphate of magnesia calculi. They vary in size from fine particles of sand to lumps of several ounces.

**Symptoms.**—Calculous matter in the kidneys is attended with a hard pain in the loins, shooting downward toward the thighs, which are affected with numbness; the pain is increased by exercise; the urine often deposits a sandy sediment, which may be either of a white or red color; the pain often alternates with a sense of weight.

The passage of a large gravel or sandy particle through the ureters is often intensely agonizing, and accompanied with nausea, fainting, and generally retraction and inflammation of one of the testes. The penis, however, is not affected, from which circumstance this affection may be distinguished from inflammation of the kidneys or bladder.

If the calculus is stopped in the ureter, heat, thirst, and fever come on, and the retained urine being thrown back into the blood, soon becomes intermitting pulse, crura, convulsions, and death.

Some in the bladder produce a frequent desire of making water, with a difficulty of discharging it; there is some pain at the extremity of the urethra, and on examining the bladder the instrument meets with a spongy resistance. After horseback-riding, or any hard, jolting exercise, the urine is bloody; in some cases it is loaded by drops, and sometimes the stream is suddenly stopped before urination is completed. When the stone becomes large there is a dull pain about the

neck of the bladder, and the rectum is affected with a troublesome tenesmus.

*Special Causes.*—Hard water, the free use of salt, alkalies, especially the ordinary employment of salutaræ; strong acids, as vinegar, rhubarb and fermented liquors, and flesh meats, are the most common and most efficient causes.

The general connection of the calculus or *lithic acid diathesis* with the gouty—both being almost always manifested in the same persons with warning; continuity to animal food and wine as among the leading causes.

There is no doubt in my mind that the salts and magnoesia with which nursing mothers and suckling infants are so frequently dosed "for medicinal purposes," occasion many of the cases of gravel and stone we meet with in young children.

*Treatment.*—To allay the suffering, the warm hip-bath, and in extreme cases the full warm or hot-bath is necessary; and if the pain is prolonged, the wet-sheet pack, of two or three thicknesses, will be the best sedative.

The curative treatment consists in fixing the whole system from all extraneous ingredients as rapidly as possible, for which purpose the diet must be strictly vegetable; the drink nothing but pure soft water, and frequent packing and rubbing wet-sheets, with such additional appliances as the general health may demand.

Our old-school friends have a variety of chemical tests to determine the acid or alkaline predominance of the calculus; if acidity prevails, alkalies are administered; and if alkalies are most abundant, acids are the remedies. This is like putting out a fire by throwing on green or wet wood; it dampens the flame for a moment, but increases the combustion in the end. These acids and alkalies are all the while filling the system with the very ingredients which afford the material for calculous formation. The surgical operations for stone will be considered hereafter.

*Note.*—The success which has attended the diuretic treatment of calculous affections, is the hands of some physicians who have made this branch of the profession an exclusive business, is corroborative of the pathogenic and therapeutical views above advanced. The treatment of these "gravel doctors" consists mainly in the free use of regularly dosed drinks—decotions of diuretics, milk-wood, queen of the meadow, etc. These drinks are continued for several months, and by increasing the amount of fluid which passes through the kidneys and bladder, assist to wash away the superfluous earthy particles.

## CHAPTER XX.

## DISEASES OF THE SKIN.

SOME three hundred abnormal appearances of the skin have been described as distinct diseases by authors; and I know not why a sufficient account of ingenious but useless analytical skill, by elevating every peculiar mark, spot, blotch, patch, or pimple, to the rank of a specific malady, might not extend the list to three thousand. The following tabular arrangement comprehends all that are important to distinguish, for either theoretical or practical purposes:

Cutaneous Rashes	<ul style="list-style-type: none"> <li>Rose Rash,</li> <li>Quint Rash,</li> <li>Lockworm Rash,</li> <li>Pruriginous Rash,</li> <li>Millet Rash.</li> </ul>	Scaly Eruptions	<ul style="list-style-type: none"> <li>Dandruff,</li> <li>Leprosy,</li> <li>Pemphigus,</li> <li>Ichthyism.</li> </ul>
Blains	<ul style="list-style-type: none"> <li>Water-Blisth,</li> <li>Herpes,</li> <li>Rhysis,</li> <li>Eczema.</li> </ul>	Humid Scals	<ul style="list-style-type: none"> <li>Impetigo,</li> <li>Pomphus,</li> <li>Erysipelas,</li> <li>Scabies.</li> </ul>
Macerate Skin	<ul style="list-style-type: none"> <li>Vesil Skin,</li> <li>Mole,</li> <li>Freckles,</li> <li>Sunburn,</li> <li>Orange Skin,</li> <li>Pinkish Skin,</li> <li>Albino Skin,</li> <li>Cyanosis.</li> </ul>	Morbid Swell	<ul style="list-style-type: none"> <li>Protrusion,</li> <li>Itchy,</li> <li>Colored,</li> <li>Soured,</li> <li>Squid.</li> </ul>
Cutaneous Verminations	<ul style="list-style-type: none"> <li>Lousiness,</li> <li>Insect Bites,</li> <li>Worms.</li> </ul>	Morbid Hair	<ul style="list-style-type: none"> <li>Bristled,</li> <li>Matted,</li> <li>Extraneous,</li> <li>Forky,</li> <li>Gray,</li> <li>Darkened,</li> <li>Arenated,</li> <li>Discolored,</li> <li>Sensitive.</li> </ul>

CUTANEOUS RASHES.—Rose Rash—marks of pathos—is an effluence which appears in blotchy patches on the cheeks, neck, or

sums, after fading and reviving; usually appearing in the spring or autumn. *Gum Rash*.—*Crysioides*—is peculiar to early infancy, and consists in an eruption of red or whitish papules about the face, neck, and arms, interrupted by irregular patches of inflammatory black, and constituting several sub-varieties, called *red gum*, *white gum*, *roth rash*, *wild-fire rash*, etc. The *lichenous rash* is characterized by a diffuse eruption of red pimples, with a troublesome and sometimes insupportable sense of itching or pricking; it is subdivided into *simple lichen*, *summer rash*, or *prickly heat*; *wild lichen*, *winter lichen*, *hens lichen*, *stammering lichen*, *bird lichen*, according to its varying and strikingly prominent appearances. *Pruriginous rash* is known by a diffuse eruption, with pimples of nearly the same color as the cuticle, itching acutely, and when abraded or broken by the nails, emitting a fluid that concretes into rusty black scales. The *millic rash* is distinguished by very minute, subcuticular, distinct, milk-white, hard, and glistening papules, which are confined to the face.

*Special Causes*.—Rashea is often symptomatic of other diseases. When idiopathic, it is produced by sudden and extreme alternations of temperature, drinking very cold water after violent exercise, etc. Gum rash is produced by coarse woollen clothing, wetness, greasy and highly-salted food, and various other bad dietary habits of either mother or child. Lichenous rash is more frequently attributable to acrid bile than to any other single cause; and when a torpid liver is connected with an obstructed skin, and both of these conditions with a high summer temperature, we have the causes of its worst forms. Dr. Good remarks: "So far as I have seen, the varieties of this disease depend upon a peculiar irritability of the skin as its remote, and some accidental stimulus, as its exciting cause." If there is any thing but "superficial nonsense" in such a flourish of words, I am no judge of the article. Pruriginous rash is more especially attributable to retained perspirable matters, and these have their cause in cutaneous unsoundness. Some authors have ascribed this form of skin disease to a fish diet. Millic rash, Dr. Good ascribes to "a torpid state of the cutaneous excretories, or rather of their mouths or extremities, which are obstructed by hardened mucus." This is a roundabout but very delicate way of representing the idea of a dirty skin.

*Treatment*.—I have many times in the course of this work had occasion to characterize the popular practice in relation to certain diseases as barbarous, unphilosophical, absurd, pernicious, etc. I have used these terms deliberately, cautiously; and, in my own estimation at least, understandingly. But if I trust to express an honest opinion of the ordinary drug-medicine in the whole range of skin dis-



oates, should apply to it all the preceding epithets, and add to them the little word silly. The siliculous was never at a greater distance from the silliness, than is the prevailing drug-treatment in affections of the skin, from true science.

The common, every-day remedies in the majority of skin diseases, are mercury in its most potent forms of corrosive sublimate and red precipitate, arsenic, antimony, iodine, preparations of lead, copper, zinc, and other minerals, with a formidable list of irritating and caustic ointments, all of which tend to *repel the disease to the internal parts*, besides poisoning the system with the drug-mercury. Many an idiot has been isolated for a fatal disease, and many a child for a violent constitution, to the medicine of a skin disease. For a single illustration—and thousands like it might be quoted from standard medical books—Dr. Good, who wishes neither rash to an obstructed skin, instead of telling us how to clear out the obstruction, prescribes “botches of brandy, spirit of wine, tincture of myrrh, a solution of sulphate of zinc with a little brandy added to it.”

The hygienic management is intended to answer two indications; 1. To allay the local irritation; 2. To purify the blood and all the secretions. In almost all cases of excessive irritation of the skin, unaccompanied with fever, tepid water is preferable to very cold for bathing purposes. The pack, followed by the half-bath at about 72°, with moderate rubbing or friction, is one of the best leading processes. The half-bath alone, if accompanied with a rigidly plain and abstemious diet, will generally very soon effect a cure; and the same may be said of the dripping-sheet; in fact almost any kind of washing, if sufficiently frequent, with a plain diet, will cure in due time. There are no diseases in which male nurses, highly-oiled or highly seasoned foods, gross mixtures, and excessive stimulations, have a more pernicious influence than in the affections under consideration. It is also of some importance to preserve a uniform temperature of body, avoiding all extremes of heat or cold, and especially damp, chilly winds. When the itching or pricking is insupportable, the full warm-bath may be advantageously employed as an occasional sedative.

**SCALY ERYTHEMA.**—The first variety, *dandruff*, consists in patches of fine brassy scales, easily separated from the cuticle, which is not irritable or tender. It may affect the head, trunk, or whole body; in the latter case the scabiness is red, brown, or yellow.

**Leprosy—lepra—lepraicula**—presents patches of smooth bristled scales, of a circular form, and of different sizes, surrounded by a reddish prominent circle, with a central depression; situated generally

over the surface. Its principal sub-varieties are the common white leprosy, and the black leprosy; so called from the color of the scales, which varies from a bright white to a dusky brown. In some cases the scales exist in scattered patches and in others in confluent clusters. It has generally been regarded as contagious, although some authors dispute its contagiousness altogether.

*Pustular—dry scall—rough scabies*—consists in bright patches of continuous scales, of indeterminate outline, generally appearing in serpentine or tortuous stripes and found chiefly on the back and face, but sometimes extending over the whole body. In children it is considered contagious. The surface is often chapped and excoriated, and itches or burns whenever exposed to natural heat. A sub-variety of this affection has been called *grocer's itch*, *baker's itch*, &c. It frequently affects the hands of grocers, bakers, bricklayers, washerwomen, and bleachers, especially in the spring and fall.

*Ichthyosis—fish skin*—is a harsh, papulated, watery skin, or heavy infiltration, of a dusky, brown, or yellow color, sometimes covering the whole body, except the head and face, palms of the hand, and soles of the feet; and sometimes the entire body, including the face and limbs. In some cases horn like excrescences sprout out of the incrustation, and occasionally grow to the extent of several inches. It is regarded by some as a morbid development of the cuticle, and is generally contagious.

*Spiritual Cause.*—Gross food, personal uncleanness, and sudden alterations of temperature, are the ordinary causes. Disbarr in the head is often produced by too much head apparel, pressing or oiling the hair, making it too closely on the head, and excessive brain labor. That leprosy was regarded as emphatically a disease of bodily impurity, when it prevailed among the ancient Hebrews, is evident from the whole tenor of the code of the Jewish law—given on the subject of personal cleanliness, especially as related to the food of his people, and the rigid measures of purification deemed necessary in the treatment of lepers under the Mosaic dispensation.

*Treatment.*—The principal point of difference in the management of extensive rather than only superficial is this: in the latter, on account of the less degree of irritability or tenderness of the skin, water of a colder temperature may be employed, and considerable friction can generally follow the bath with advantage. Probably the most efficacious treatment in a majority of cases, would be the long pack, from one to two hours—using one or three thicknesses of the wet sheet, followed by a thorough rubbing with the dripping sheet. Of course, when there is an overcurved or forward hair, due precautions must be taken to

secure proper reaction or a comfortable glow after each pack. The draught of the body can always be cured by a persevering employment of the wet towel; and when the head is badly affected, so that the hair is loose and easily falls out when the comb is used, the hair should be worn rather short, and the head washed once or twice a day in very cold water.

**HEMORRHOIDS.**—These affections consist in venous elevations of the antricle, containing a watery fluid.

In *under-blebs*—*pompholyx*—the eruptions, which are usually distinct, and break and heal without scale or crust, contain a reddish transparent fluid. They appear successively in various parts of the body, of the size of pins, silberts, or walnuts, sometimes burning and itching in three or four days, but occasionally forming an elevated surface.

**TITER**—*derpesis*—an eruption of vesicles in small distinct clusters, with a red turgor; transparent at first, but soon becoming opaque; it is attended with tingling or itching, and the vesicles coalesce into scales, and desquamate in the course of two or three weeks. It presents several varieties, as *military*, when the vesicles are millet-sized; *corroive*, when the vesicles are large and discharge an acrid, corroding fluid, which spreads in serpentine trails; *diagonal*, when the vesicles are pin-head-sized, and spread in clusters around the body like a girdle; *ringworm*, when the vesicles have a reddish tinge, and are united in rings; *varicellous*—*varicella*, when the vesicles, which unite in small rings, are surrounded by larger concentric rings of different hues, and *local*, when they are limited to a particular part.

In *rhypis*—*chaps*—*scuffed skin*—the eruption consists in hard, distinct vesicles, having a slightly inflamed base, and filled with a sticky fluid, which often produces gangrenous and offensive scabs. The scales are thin and superficial, and easily rubbed off and reproduced.

**KRIMO**—*heat eruption*—consists in tense, distinct, but closely crowding vesicles, containing a transparent or silky fluid, attended with toothsome itching or tingling, and terminating in thin scales or scabs.

**Special Causes.**—Rayer, who has written an elaborate treatise on diseases of the skin, assigns "chronic vascular inflammation as irritation," as the nature, cause, cure and extension of nearly the whole catalogue, while Drs. Good, Cooper, and Thompson, equally eminent authors, dispose of this branch of the subject quite as conveniently by the planum,—"a peculiar irritability with facility, either general or local"—planum which I am sorry to say I cannot divine the meaning

of. Indigestible food and intervening fevers are the ordinary causes of water-blisters. Tetter is generally owing to acrid bile, thrown upon the surface. Rhytts almost always affects children who have been reduced by bad nursing and bad drugging. Heat-eruption is usually produced by violent exercise, exposure to hot air, or the direct rays of the sun, and not infrequently by the use or abuse of mercury.

Treatment.—In addition to the general plan of treatment recommended here for skin diseases, the digestive function, being more particularly implicated in the diseases before us, requires some special additional attention. In all the varieties of tetter or herpes, free water-drinking, frequent hip-baths, and the abdominal girdle are appropriate. In the acrid blain of children, the parts affected should be frequently washed in very cold water, except when the affected surface is itchy and tender, when warm or tepid washing is the most soothing.

**BRUN SCALD.**—The present genus of scall or scale-skin diseases is characterized by an eruption of small pustules, either distinct or confluent, which harden into cruminate plates.

*Impetigo—running scall*—appears in yellow, itching, clustering pustules, terminating in a yellow scaly crust, intermixed with cracks. It is generally confined to the hands and fingers, but sometimes extends over the lower extremities, and occasionally affects the neck and face. A thin ichor or purulent matter often issues from the interstices cracks, which corrodes the skin and cellular membrane; and in some cases the aggregated scales form a thick, rigid casing around the affected limb so as to impede its motion. Sometimes the disease commences with a puffiness swelling of the face, with inflammation of the eyelids, very much resembling erysipelas, but without its smooth pulsils.

*Perrigo—scabby scall—face*—consists of snow-colored pustules, which coalesce into yellow scales. Its principal sub-varieties are, the milky scall, or *crusta lactea*, which chiefly affects infants at the breast, the pustules commencing on the cheeks and forehead, and often covering the whole face with a continuous incrustation; and the scalled head—these again—found mostly in young children, marked by pustules which commence in the scalp in distinct patches, and gradually spread until the whole head is covered, and the roots of the hair destroyed. It is generally regarded as contagious. Other less important forms have been called *lapine*, *longeum*, *furfuracea*, *ringworms*, etc.

*Ecthyma—populous scall*—is characterized by large, distinct pustules, raised on a hard red base, and terminating in hard greenish, or dark-colored scabs. It occurs at all periods of life, from the earliest infancy to advanced age, and is very often symptomatic of other diseases.



*Scabies*—*itch*—is an eruption of acute papules of a papular, pustular, vesicular, or mixed character, accompanied with insupportable itching; it is found chiefly in the flexures of the joints or between the fingers, and is highly contagious. It is one of the most complicated of the cutaneous diseases, presenting many sub-varieties, the principal of which are the papular or rash itch, the vesicular or watery itch, the parasitic or pocky itch, the complicated, in which the disease extends over the body, often affecting the face, and the mangy itch, which is produced by breeding mangy animals.

*Special Causes*.—Most of the forms of humil scall are owing to the combined operation of two sets of causes, one of which is negative and the other positive. The negative causes are the absence of water, soap, flesh-liquors, and warm towels; the positive, are gross and irritating food, as fried pork, salt ham, sausages, old cheese, fried cakes, and cooked and burnt fats of all kinds, and acid or stimulating drinks, as hard cider, acid wines, and ardent spirits. Some forms of humil scall, which are confined to the hands and feet, are occasionally produced by acute exposures to cold or wet; a remark which holds true also of some forms of dry scall which are confined to the extremities. Mothers ought to know that this disease inherits may invade them and many other cutaneous diseases in their offspring while nursing, and even before birth.

*Treatment*.—Thorough and frequent ablutions, with a plain vegetable diet, and the constant use of wet compresses when the skin is chafed or ulcerated, compose the general remedial course. The patient should be kept in a moderate uniform temperature, and when the hands or feet are deeply cracked, sore, and exposure is inevitable, the sores should be soothed occasionally with olive oil or sweet cream, taking the precaution to wash or soak the part in warm water before applying it. Parents, as they value the future health of a child, should avoid all repellent lozenges, cathartics, or all-healing specifics, in all forms of skin diseases. They may indeed smooth the skin, but the disease will be only transferred to an internal and more vital part.

The whole system of allopathic medication is calculated to drive the disease in; but all rational practice will contemplate the exact contrary. On so simple a disease as the common itch, which is always cured as soon as the skin can be made clean, nearly the whole force of the apothecary shop has been spent in vain; and the disease has been cured by two or three thorough soap-washings, after sulphur, lead, mercury, arsenic, tar, turpentine, berries and burnt wine, chalybeate waters, pepper and whiskey, gun-dal oint, and white and red precipitate ointments had been used without success.

**CUTANEOUS VERMINATION.**—The scalp may be infested with the common louse, which mostly infests the heads of uncivilized children; the crab louse, which is found chiefly about the groins, pubes, and eyebrows of nakedly persons, producing extreme itching; the common flea, whose eggs are deposited on the roots of the hair and on garments; the chigger, a West Indian flea, not more than one fourth the size of the common flea, which deposits a bunch of minute eggs in the feet of dirty persons, sometimes occasioning ulceration and mortification; the tick, of which there are several varieties—the domestic tick, tick, and *dermatitis* bug—whose bite occasions an itching and smarting pain; the *Quinta-verna* of the Indians, the gnat fly, which is common to quadrupeds, but sometimes burrows in the nostrils resembling of human nose; and the hair worm, which, by the way, involves a disputed point, whether the infestation is a live animal, or merely a morbid growth of real hair.

Personal cleanliness is the best preventive of these intrusive creatures, and cold compresses are the best remedies when bitten by any of them. The second variety, crab louse, is often excessively troublesome. Medical books tell us that strong mercurial ointment is sure death to them; and the same may be said of strong soap-suds, or a sufficient amount of cold bathing and friction without the soap.

**MACULAR SKIN.**—Single discolorations of the surface are generally the result of depraved secretions, retained excretions, the introduction of drugs or foreign substances in the body, blows or bruises, or of exposure to strong cold winds or hot sunlight. Sometimes, however, a change in the color of a part or of the whole skin takes place, which we are unable to trace to either of these causes; and one example—*syphilis*—is frequently owing to organic malformation of the heart.

In the real skin variety the skin is marked by white, shining, permanent spots, the superficial hair falling off and never reappearing. The mole is a permanent, circular, brown patch, sometimes slightly elevated, and crested with a tuft of hair. *Freckles* are yellowish-brown dots on the outside, resembling minute hard seeds, and often transitory. *Saskara* is a temporary discoloration from exposure to the sun, which disappears in the winter; orange skin is mostly confined to young infants whose mothers were affected with torpidity of the liver during gestation, but it sometimes appears in adult life from bilious obstructions. Polished skin is a general mottled appearance of the entire body, with alternate patches of black and white. Albinism is a dull-white state of the entire body, with very purple, weak sight, and white or flaxen hair; it is usually found among negroes, but is sometimes known

taining the white races; it is sometimes congested, and in some instances the skin black and also white, have changed to Albinoism.

*Cyanosis*.—This disease consists in a known by the white skin being more or less blue, the lips purple, with general dullness of mind and debility of body; it is always congested.

*Special Causes*.—Severe fevers have been followed by various permanent discolorations; even a black man has been transformed into a white man by this cause. In some cases, spotted and mottled-colored skins are hereditary. Several medicines often produce local spots or a universal dingy, bluish, or dark appearance of the skin. Nitrate of silver is a very common cause. When administered for several weeks, it frequently produces a deep tawny and uniform discoloration, approaching to a black, being deepest in the parts most exposed to the light. Sometimes, however, discoloration from this drug appears in patches, and sometimes one half of the body is affected.

This blue disease is generally owing to some malformation of the heart, the most common of which is a communication between the two ventricles, thus rendering the decomposition of the blood imperfect, and giving rise to the venous or cyanotic discoloration. Nitrate of silver has also produced a bluish tinge of the whole skin, closely resembling cyanosis.

*Treatment*.—Most of these affections are unimportant trifles, and many of them are unalterable for the better. Yellow skins, blotches, mottled appearances, etc., when induced by a diseased liver, can be often cured by restoring the functional action of this organ. When the skin is discolored by drugs, a persevering employment of the wet-sheet, with a course of free water-drinking and plain vegetable diet, will do all that can be done in the way of resolution, although it will seldom wholly remove the difficulty. The blue disease is incurable; its subjects are feeble and short-lived; and all that can be done to prolong existence is found in plain, quiet, simple habits of life.

*MOURID SWEAT*.—Profuse perspiration, when not a symptom of some acute disease, is an evidence of debility, and requires no attention, save a course of tonic bathing and regimen. *Bloody sweat*, though regarded as an idiopathic disease by some authors, is usually a venereal affection, or is rheumatic, or the result of vehement exertion, violent exertion, or intense agony. *Partial sweats* are, I believe, always symptomatic. *Colored sweats*, which may be green, blue, black, or yellow, result from obstruction of the liver or kidneys, or from some metallic or mercurial impregnation. *Scented sweat* may be rank or foetid, sweet or stercoraceous or urinous, balsamic, acrid, etc. *Mourid*

of these vagaries depend on the dietetic habits of the individual, in connection with the amount of bathing practiced. Some persons, who never or but seldom bathe, and eat strong food, are exceedingly disagreeable to the olfactory nerves of others. Many persons who exercise much in fact, wear flannel stockings, and bathe rarely, have a horribly effusive scent, which becomes intolerable on exposing the feet to the fire. I once had a patient who exhaled from the axilla a strong spicy, or rather kine-dye odor, for which he could assign no probable cause. Scaly scurf, however, by a reddish scaly crustal concreting on the surface, indicates great deficiency in the functional action of the kidneys, or great excess in the saline and earthy matter taken into the system with the ingesta. The proper treatment, I trust, is sufficiently obvious in all these cases without farther remark.

**HAIR.—TRIESTE.**—Even the hairs of our heads may become deranged by our physiological transgressions, although, next to the bones, they are the most indestructible of our bodily constituents. The brittle or porcupine hair, is usually regarded as an effect of gross nutriment connected with general habits more congenial with *perver* animal than *progre*ssive human nature. **Matted hair**—*glans polonica*—the hairs becoming enormously thickened, intricately entangled, and matted together by a glutinous secretion—is supposed to result from covering the head too closely, as with a thick woven linnen or leather cap, with little or no attention to washing, or in very very cleansing the head. **Enormous hair**—*trichia*—is most extensively noticed in bearded women, and has been imputed to excessive assimilation, the excessive use of pork, shell-fish, and other gross foods. **Pearly hair**—the hairs of the scalp weak, slender, and splitting at their extremities—is a constant complaint, depending for its immediate cause on defective nutrition in the bulb or root. **Gray hair**, when not “frosted by age,” may be produced by fright, terror, grief, excessive brain labor, violent fevers, etc. **Baldness** may result from the mere egress of gray hairs, and is often the consequence of skin diseases. It is far more common in males than in females—which fact seems to corroborate the physiological axiom which some have advanced, that the constant practice of cutting the hair and shaving the beard is a source of bodily infirmity. **Aloated hair**—patches of bald spots in the scalp or beard—is probably owing to some obscure skin disease or preternatural enervation of some portion of the brain. **Misshaped hair**—the hair changing to blue, black, green, or spotted—occasionally results from fevers, terror, heating the head, mineral and volatile vapors, etc. **Scutiger hair** is usually owing to revolved nutriment, and



this is usually owing to wounds or injuries of the head, and febrile or inflammatory affections. The hair, in some instances, is so acutely sensitive that the slightest touch, or the cutting of a single hair, gives exquisite pain.

*Treatment.*—Cutting the hair short, and frequently bathing the whole head in cold water, is the general restorative process in these derangements from health—some of which, however, are not curable. In cases of excessive sensibility or tenderness, tepid or moderately warm water should be employed. In the *plexipolonia*, the hair should be cut very close, the scalp frequently washed with tepid water, and derivative hip and foot-baths directed. And in all cases the general regimen must be physiologically regulated, and such bathing appliances brought in requisition as the general health and particular circumstances indicate.

## CHAPTER XXI.

### POISONS.

No general is the employment of substances for chemical, medicinal, and medicinal purposes, which are poisonous to the living organism, whether taken into the stomach or applied to the skin; and as numerous are the emergencies wherein relief must be either immediate or impossible, that a work of this kind would be sadly defective without a brief consideration of this branch of pathology and therapeutics.

Toxicologists have usually classified poisons according to the kingdoms from whence they are derived, as *mineral, vegetable, and animal*. Some have arranged them according to their action on the human economy, and others have merely distinguished them into *general and local*. Christison, who has written the most elaborate work on this subject, divides them into *irritants, narcotics, and nervo-tonics*. The first embraces all poisons whose principal symptoms are those of irritation or inflammation; the second produce stupor, delirium, spasm, paralysis, etc.; and the third, as the term implies, produce either or both sets of symptoms, according to the dose and other circumstances.

But what are poisons? This is a problem not yet settled among medical men. In its broadest sense, the term must comprehend every thing foreign to the natural constituents of the human body, and even these constituents themselves, when their constituent elements are in

natural relations or proportions; every thing, as a river, which is not properly food, drink, or atmosphere. This loose definition will include the whole *materia medica* of our aboriginal friends; and in truth, almost every poison known was an integral part of that *materia medica*. Established usage has, however, restricted the idea of poison to the sudden, prevalent, and immediately dangerous effects of these articles, while those equally noxious yet more slow, gradual, and remote consequences are called diseases.

Were I to attempt—what no toxicologist has yet accomplished—a satisfactory and philosophical arrangement of poisons, I should base it on the alchemical *materia medica*, as toxic poisons, stimulant poisons, emetic, cathartic, diaphoretic, expectorant, vermifuge, and exanthematic poisons, etc.; but whether such a classification would be pathological or therapeutic, is a question I am willing to submit to “future generations.” In the present chapter, the effects of large or poisonous doses will be chiefly considered, and small or medicinal doses only incidentally alluded to.

**ACIDS.**—The nitric, sulphuric, muriatic, or hydrochloric, phosphoric, oxalic, and acetic acids, are corrosive poisons; and whether taken internally or applied externally, produce redness, inflammation, vesication, and sloughing.

**Symptoms.**—When swallowed, a burning sensation in the throat, excruciating pain in the stomach, and gaseous eructations are usually the immediate effects. When taken in extremely large doses, the sensibility may be so suddenly destroyed that the pain will be decedingly slight. All the symptoms are best seen when the poison acts upon an empty stomach.

**Treatment.**—All alkaline matters are classically antides; there is, however, a choice, for the reason that some alkalis are themselves extremely corrosive. Chalk and magnesia are the best. A solution of hard soap answers very well. Staked lime, or carbonate or supercarbonate of soda may be given; and in the absence of all these, a remedy may be found in the common plaster of an ordinary tincture, which may be beat down in a mortar and made into a thin paste with water. The patient should drink as much water as he can swallow conveniently. The stomach-pump is not necessary.

**ALKALIES.**—Caustic potash, caustic soda, quick lime, ash of tartar, potash, soda, and ammoniac; carbonate of ammonia, or smelling salts, and spirits of ammonia, or hartshorn, are the usual alkalies found which accidental poisoning results.

*Symptoms.*—These do not differ essentially from those produced by the strong acids.

*Treatment.*—Of course, all acids are antitotal. Vinegar, lemon-juice, or any of the stronger acids, largely diluted, may be given. In the absence of acids, any of the fixed oils, or olive or almond, by converting the alkali into a soap, will neutralize its corrosive effects. In other respects, the treatment is the same as for acid poisons. The resulting inflammation is all cases of poisoning, is to be treated promptly like inflammation from other causes.

*NEUTRAL SALTS.*—The most violent of the preparations commonly known as neutral salts is *sulphate of potash*—sulphate, *sulphate*. In the apothecary-shops mistakes are often made, by which this article is put up for sulphate of soda, sulphate of potash, and other saline leucures, so that the patient gets poisoned. It produces stinging pains in the stomach, and the usual symptoms of a violent cholera, with coldness, debility, and great relaxation of the nervous system. Other neutral salts is *mercurous nitrate*, as Glauber and Epsom, are not dangerous except in excessive doses; the symptoms then are drastic purging and great debility.

*Treatment.*—We have no direct antidotes in the cases before us, and our duty is chiefly to combat inflammation. When nitro has been swallowed, warm water must be freely taken, and the stomach-pump employed if practicable. Wet bowdages to the whole abdomen are called for, and the warm-pack is often serviceable. The effects of the other neutral salts are to be counteracted by acid or cold injections, and warm hip-baths.

*MERCURY.*—*HYDRARGYRUM.*—The most actively-poisonous of the salts and oxides of mercury in common use, are calomel, *fulguris* mineral, corrosive sublimate, red precipitate, cinabar, vermilion, and cyanuret. Of these, red precipitate and vermilion are most frequently the agents of accidental poisoning; while calomel and corrosive sublimate are the common agents in medicinal and suicidal poisonings. It is a serious fact, among the "curiosities of medical literature," that the standard books *enough* *of* are distinct *toxicities* resulting from the medicinal administration of the various preparations of mercury!

*Symptoms.*—When very large doses are taken, especially of the more powerful of the mercurials, there is violent pain in the stomach, intense thirst, vomiting, heat and fever. When corrosive sublimate has been given in large doses, or when small doses have been a long time

continued, there is a grating pain in the bowels, with a tendency to hemorrhage. When the system is slowly and gradually saturated with the poison, the effects are distinguished by the general term *arsenicalis*, the symptoms of which are general fever, tremors, faded countenance, livery taste, iron green, lowered teeth, shivering at the mouth, swelled tongue, and albescent-belliness. In some cases the tongue is enormously swollen, and protrudes laterally from the mouth, the poor poisoned patient being unable to articulate or swallow.

Treatment.—When a large dose of corrosive arsenicite has been swallowed, alumina or gluten will decompose the salt and prove an efficient antidote. The alumina may be found in the white of eggs, and the gluten in wheaten flour. Either may be given freely; the white of eggs being previously beaten up with water or milk, and the flour may be administered in either water or milk. In the absence of either eggs or flour, milk is the next best antidote.

To cure salivation, and remove mercury and its effects from the system, require a persevering employment of the purgation-diet, which may be warm, tepid, or cold, according to the susceptibility of the patient, and so managed as to produce moderate but frequent perspiration.

When paints, ointments, etc., which contain some form of arsenic, are accidentally swallowed, the patient should drink copiously of warm milk made into a very thin batter with wheaten flour, and, if the accident is soon discovered, the stomach-pump should be employed.

ARSENIC—ARSENICUM.—The arsenical preparations from which poisoning occasionally results are, the *pyretide*, or *fly-powder*; *arsenious acid* or *white arsenic*, commonly called *rat-bait*; *arsenite of copper* or *mineral green*; *arsenite of potash*, as in *Fowler's solution*; *arseniated-hydrogen gas*, which is evolved in various chemical operations; and several sulphurets of arsenic, as *realgar*, *orpiment*, and *King's yellow*.

Symptoms.—In a great majority of cases there is violent irritation and inflammation of the whole alimentary canal; a burning pain in the throat and stomach, which soon extends over the whole abdomen, with nausea, flatulency, and extreme prostration of strength. In some cases, however, the pain is slight, the nausea and vomiting moderate, but the vital depression excessive and alarming, and often attended with convulsions, paralysis, insensibility or delirium. When arsenic has been given medicinally it soon causes for some time, the first prominent symptoms of its specific action on the system is a peculiar puffiness of the whole face, called in medical parlance *edema arsenicalis*, and



attended with redness of the eyes, and followed by griping, nausea, purging, and a gradual sinking of the vital powers.

**Treatment.**—The stomach-pump should always be resorted to as soon, if possible. If this is not at hand, the patient should drink copiously of warm water, and have the throat rubbed with the finger to a further to excite vomiting. We have no antidote in the chemical sense, and medical books recommend a variety of diluent and demulcent liquids, to arrest the poisonous matter and thus indirectly defend the coats of the stomach. Flour and water, and olive oil are complete substitutes for the whole lot. Some authors advise large quantities of the *hydrated sesquioxide of iron*; but its value is uncertain and far from being reliable.

To remove the independent inflammation and counteract the effects of the poison, Dr. Poirer tells us:—“Our principal reliance must be on the most antiphlogistic measures, particularly blood-letting, both general and local, and blisters to the abdomen. One drawback to the success of this treatment is the great depression of the vascular system, so that the patient cannot expect large evacuations of blood”—this means in its way, the patient must be bled on theory, although it will kill him in practice.

**ANTIMONY.—ANTIMONYUM.**—Accidental poisonings with antimonial preparations are uncommon; but medicinal poisonings are extremely frequent. Death very often results from an over-dose of tartar emetic; and this deadly drug is extensively diffused among us, being a common ingredient in medicines, liniments, cough mixtures, drops, and syrups, &c. The popular preparations of the regular phlegmopain, *Josam's powder*, and *Plummer's pills*, are strongly charged with this dangerous drug. Besides tartar emetic, the oxide or sesquioxide of the metal, called *flowers of antimony*, and the *chloride*, are sometimes the agents of accidental poisoning.

**Symptoms.**—Small doses produce scarcely any obvious effect save general debility. Large doses produce epigastric pain, vomiting, and often purging. In very large doses it occasions extreme vascular relaxation, tremor, depression, vital exhaustion, sometimes convulsions and death. Applied to the skin, tartar emetic produces an eruption of painful pustules resembling scald-poison. Death has resulted from the absorption of the drug, when it has been applied to an abraded surface.

**Treatment.**—Our main reliance must be on the *Stimulating water emetic*, in the early stage, and the usual “antiphlogistic” water-treatment in the later stages. Persons who are severely poisoned with any form of antimony are always cold, rigid, sensitive, and delirious, so that

our bathing appliances must be gentle and of moderate temperature. The vermifuge is essential to check common eruptions when a large dose of the drug has been taken. Medical books recommend strychnia, or tea, nuxgill, nuxchama, &c., on the supposition that tartaric acid is antiodic to tartar emetic. But the numerous experiments which have been tried do not establish its claim in this title.

**LEAD—POTASSIUM.**—All the preparations of this metal, except the sulphate, are *emergita potassa*. The *arsenite-sugar of lead*—*emulsion arseni*, is the form in which it is usually given internally as a remedy. The preparations from which accidental poisonings chiefly result are, *litharge*—the *pyrochlore of lead*; *red lead*—the *red oxide*, or *denticule*; *white lead*—*carbonate of lead*; and *Boulton's extract*—the *acetate*. Milk, molasses, and even pure water, may acquire a poisonous property by standing in leaden vessels. Red earthen-ware ought never to be used for cooking fish or poultry, on account of its lead glazing; indeed all colored crockery ought to be "ruled out" on account of its metallic coloring matter.

**Symptoms.**—Small doses check the secretions generally, and constipate the bowels. Large doses constrict the circulating vessels, reduce the pulse, diminish the temperature of the body, produce dryness of the mouth and throat, and a general wasting of the body. In most cases of lead poisoning there is a narrow leaden-blue line bordering the edges of the gums, attached to the necks of two or three teeth of either jaw; the saliva is often bluish. The extreme effects are *lead-osis*. Excesses does produce rare or less gastro-enteritis.

**Treatment.**—The warm water emetic must be given in the first instance, and the stomach-pump employed if practicable. The soluble alkalis or earthy sulphates, or the alkaline carbonates, will lessen the injurious effects of the preparations of lead, by changing them to sulphates. For this purpose phosphate of soda, alum, Glauber or Epsom salts are appropriate. These chloids are unnecessary when the vomiting has been thorough or the stomach-pump introduced. The treatment for lead-colic has already been given.

**Copper—Cuprum.**—The salts of copper have been much employed in the manufacture of caldery vessels; and to make candles, sweetmeats, and preserves, from which frequent poisonings have resulted. The preparations in common use are *mineral green*—the *hydrated oxide*; *blue vitriol*—the *sulphate*; *emerald verdigris*—the *carbonate*; and *artificial verdigris*—the *mixed acetate*.

**Symptoms.**—These are quite various. In small doses they are

manifested by cramps, purtyria, discoloration of the skin, slow fever, wasting of the body, chronic inflammation of the stomach and lungs, etc. Its large doses, unites, vomiting, coppery taste, constipation, griping pains, and gubulous result. Very large doses produce convulsions and immobility, with the usual symptoms of gastro-enteric inflammation.

**Tincture.**—Whiten flour, milk, and the white of eggs, are here out avoided again. Vinegar has been a popular prescription, but it is actually injurious.

**Bismuth—Bismutum.**—There are two preparations of this metal in common use; the first is the *trinitrate*, which is extensively used as medicine, and known by the various names of *oxide of bismuth*, *suboxide of bismuth*, and *margarite of bismuth*; the second is the *hydrate of the metal*, and is extensively used in the cosmetic art under the name of *pearl white*. They are both caustic poisons.

**Symptoms.**—Small doses diminish the sensibility, but large ones cause pain, vomiting, giddiness, gastric disorder, cramps in the extremities, etc. The cosmetic preparation has produced epidemic trembling of the muscles of the face, terminating in palsy.

**Treatment.**—We have no chemical antidote, and must rely on warm water, the stomach-pump, &c.

**Tin—Stannum.**—The *chloride of tin*, used in colour-making and dyeing, and the *oxide*, which forms a part of the putty-powder for glass painting and silver plating, are the preparations of this metal which sometimes, though rarely, occasion poisoning. Powdered tin has been given in cases done to expel the tape-worm. The symptoms of tin poisoning are similar, and the treatment the same as in the case of the preparations of bismuth.

It ought to be known to housekeepers that acid, fatty, saline, and even abundant substances, may occasion colic, vomiting, &c., after having remained for some time in tin vessels.

**Silver—Argentum.**—*Nitrate of silver*—*lunar caustic*—though a powerfully corrosive poison, is extensively prescribed internally as a nervine, tonic, and astringent medicine. The *chloride*, *oxide*, and *cyanide*, are other preparations of the metal occasionally resorted to for the same purpose.

**Symptoms.**—Applied to the skin, hair, or nails, *nitrate of silver* stains them black; to an ulcerous surface it produces a white film; and to a mucous membrane, swelling, pain, and inflammation, which lasts

several hours. Taken into the stomach in small quantities, it produces no sensible inconvenience for some time; but if large doses are given, in the small ones long, continued, heartburns, nausea, and vomiting result, and sometimes inflammation and mortification, especially when it has been taken continuously for six months or longer. Its absorption into the system produces a blueness, slate color, or bronze tinge of the skin, which is very difficult to remove. In some cases the whole body, internally and externally, has been black-dyed by the medicinal operation of this drug. The discoloration results from a chemical combination of the salt with the organic tissues.

**Treatment.**—When the drug has been recently taken into the stomach, copious tincture milk will decompose it and render it comparatively inert. When the body has been pretty well saturated with it, a long course of hydropathic bathing and dieting will be necessary, even to get rid of its effects partially.

**GOLD—AURUM.**—The morbid and medicinal effects of the preparations of the *roy metal*, as the alchemists termed gold, are similar to those of the mercurials, though they are generally more subtle and violent. Gold has been administered in the state of minute division—*pulvis aurum*—and in the forms of iodide, cyanide, and various chlorides. A preparation, called *falsifying gold*—oxide of osmium—has been experimented with considerably; and writers on various remedies tell us with sufficient coolness, that “it has produced very serious and even fatal results.”

**Treatment.**—The antidotes are alcohol, flour and milk, as in the case of corrosive substance and the preparations of copper.

**IRON—FERRUM.**—A very strange and general delusion pervades the medical profession respecting the medicinal virtues of this metal. Some chemists have detected, or imagined they have detected, a little of it in human blood; and, making a spring-board of this fact, have jumped to the conclusion that iron was a great remedy for a great many diseases. Even our “botanic,” “eclectic,” and “physico-theic” co-religionists, who are so justly horrified at the idea of mercurial and arsenical poisoning, very freely mingle chalybeate waters and ferruginous salts and scales in the preparation of their purgiving syrups, alterative mixtures, and tonic powders. If it be true that iron is in some form a natural constituent of the human body, it does not by any means follow that the preparations of the metal which are found in the pharmacopoeia are natural remedies, or remedies in any sense; nor does it follow that because phosphate and carbonate of iron are found in the



house, that contains chalk, *marble's mortar*, or plaster of Paris are natural foods?

As iron was the first mineral introduced into medicine, the history—all we have on the subject—of its introduction may not be uninteresting:—Melampus, a shepherd, supposed to possess supernatural powers, being applied to by Iphicles, son of Placus, for a remedy against impotence, slaughtered two bullocks, the intestines of which he cut to pieces, in order to attract birds to an sagary. Among the animals which came to the feast was a vulture, from whom Melampus pretended to learn that his patient, when a boy, had stuck a knife, even with the blade of iron, into a consecrated chestnut-tree, and the bird had subsequently swallowed it. The vulture also instructed the manly, namely, to protract the knife, scrape off the rust, and drink it in wine for the space of ten days, by which time Iphicles would be lusty, and capable of begetting children. The advice thus given by Melampus is said to have been followed by the young prince with the most perfect success!

Iron is employed exclusively in the form of *salts*; black oxide, or *calage martial*; *sesquioxide*—the red oxide, peroxide, or *rouge martini*, various preparations of which are known as carbonate of iron, nitride, brown-red, rouge, &c.; *hydrated sesquioxide*; *ammonio-chloride*; *sulphate*; *sulphuret*, or *common iron pyrites*; *ferro-sulphocyanide*, or *Prussian or Berlin blue*; *ferro-cyanide of potassium*, or *Prussian of potash*; *sulphate*—green nitride—oil martini—*oxygens*; *ferro-tartrate of potash*; *acetate*; *perarsulphate*; *pernitrate*; *ferro-tartrate of ammonia*; *borate*, and *nitrate*.

*Symptoms*.—The effects of the different preparations are exceedingly various, both in quality and degree. A few of them are violently irritating; but the majority are among the slow and insidious poisons. Small doses generally constrict and harden the fibres, condense the vessels, and blacken the stools, and even reduce the size and harden the structure of various glandular organs, as the liver and spleen. Like nitrate of silver, they form compounds with the organic tissues. They increase far within the frequency and force of the pulse, augment the temperature of the body, and heighten the color of the cheeks; effects indicative of fever and irritation, but which are usually regarded as remedial. Unfortunately the general and protracted excitement is, ere long, followed by corresponding sinking and depression. The sulphate and chloride of iron, in large quantities, produce great heat, weight, pain and uneasiness in the stomach, with nausea, vomiting, and watery purging and hemorrhages.

*Treatment*.—We have no chemical antidotes except the alkalis,

chalk, magnesia, &c., when the sulphide has been swallowed. This is usually obtained at the apothecary shop, in the form and under the name of *saccharated limbur of iron*. Against all the other preparations we must trust to warm-water vomiting, the stomach-pump, and the usual means for counteracting inflammation.

**ZINC—ZINCUM.**—The compounds of zinc are analogous to those of copper in their action on the system, though somewhat less violent. The preparations in common use are the *oxide—flowers of zinc*; *impure oxide, or tarry*; *chloride—muriate, or butter of zinc*; *sulphate, or white vitriol*; *acetate*; *carbonate, or calamine*; and *cyanide*. The treatment is the same as in cases of copper poisoning.

**MANGANESE—MANGANESEUM.**—The binoxide of this metal has been sometimes used in medicine. It is employed by potters to color earthen-ware; by glass-makers to destroy the brown color produced by iron, and to give an amethystine tint to plate glass; and by bleachers to produce chlorides. It has also been used as a depuratory. Its effects on the human system are more severe than those of iron, but less injurious than lead, and they are to be considered like those of the preceding poisons.

**IRON—FERRUM.**—This is an intense and acrid irritant. In large doses or small doses long continued, it causes a burning pain in the stomach, a colicque and exhausting diarrhea, with a rapid emaciation of the whole body, and extreme prostration of the whole system. Its destructive action seems to be particularly decreased in the glandular structures. In some cases the male testes, and in others the female breasts, have been nearly absorbed and entirely destroyed by its medicinal employment. Its principal preparations are the *hydrate of potash*, which is extensively used in preparations called "*un-saturated*," and is a frequent cause of puerile fevers and weak joints; and various combinations with sulphur and mercury, which are violently corrosive. Unfortunately we are without antidotes *ancho micro*, and must trust to the principles of treatment already explained.

**PHOSPHORUS.**—This article is in less repute for medicinal purposes at the present day than it was some fifty years ago. It is a powerful irritant, and its acid is corrosive. The antidotes are decubriments and alkalis—alkaline, glucose, milk, magnesia, &c.

**SILICON.**—Various forms of this article are familiarly known as

*Insolent, fumes of sulphur, red or rose sulphur, balsam of sulphur, milk of sulphur, &c.* Their action on the animal economy is weak in small doses, producing chiefly those effects which are called *loosens and discharges*. Its principal celebrity in medicine has been obtained from its success in curing the *itch*.

Very large doses of sulphur sometimes produce severe griping and purging, with great debility, the treatment for which is the same as for an ordinary diarrhea.

**CHROME—CHROMIUM.**—The *chromate of potash*, and some other salts of this metal, are extensively employed in *dyeing*. When taken into the stomach, they produce the usual swelling, griping, and purging effects of other mineral poisons; but they are peculiarly liable to be followed by a degree of debility and palsy, in a wholly disproportioned to the violent effects. The treatment should be the same as for lead poisoning.

**BROMINE—BROMINE.**—This substance has been employed medicinally as a substitute for iodine, to which its operation is similar; and when poisoning results from it, the treatment is the same.

**ALUM—ALUMEN.**—Taken internally, alum excoriated the throat, disordered the secretions, created dryness and thirst; and when large quantities are swallowed, nausea, vomiting, griping and purging succeed. The remedies are, warm water and the stomach-pump.

**PLATINA—PLATINUM.**—Some preparations of this metal, as the *bichloride* and *chloroplatinate of sodium*, have been used in medicine and the arts. Their action on the human system resembles that of the preparations of gold; and their antidotes are the same.

**BARITE—BARIUM.**—The *oxymuriate, chloride, and nitrate* of this metal produce effects on the human system hardly distinguishable from those of *arsenic*. The *chloride* has been administered in venereal cases. The antidotes are above, and the sulphates of *magnesia, lime, and soda*, which form an insoluble salt or sulphate of *barite*.

**METALLIC SALT AND OXIDES.**—There are many preparations of metals which it would be tedious to enumerate, which are violent and mercurial poisons of greater or less intensity; their effects are analogous to those of *arsenic, copper, and lead*, and in all cases of poisoning from these, the same remedies must be as reviving and the stomach-pump; the absorption of eggs and gizzards of fowls are always hurried,





time may be necessary, and may alternate with advantage, and small quantities of very cold water are to be frequently thrown up the throat.

**ACIDS.**—There are many aromatic and pungent vegetable substances not usually regarded as poisons, but which, when taken in large quantities, produce severe irritation, and even fatal inflammation of the stomach and bowels. Of this class are the essential oils, as *peppermint, camphor, clove, cinnamon, and capsaicin*; various balsams, as *Tolu, copala, Canada, and Peru*; many condiments, as *pepper, mustard, horseradish, cloves, and nutmegs*; to which may be added turpentine, oil of tar, saluba, and two or three hundred medicines belonging to the classes of cathartics, diuretics, diaphoretics, emmenagogues, etc. The action of these articles on the system, or rather, the resistance of the vital powers to their action, is not accompanied with the indications of nervous prostration or exhaustion peculiar to the narcotics proper; hence our treatment is limited to soothing irritation and combating inflammation, providing, however, that the offending material is in all cases to be got rid of by emesis, catharsis, etc., as speedily as possible.

**MUSHROOMS.**—The *fly agaric, pepper agaric, deadly agaric, bell-hell agaric, and champagne*, are the kinds of mushrooms from which poisoning most frequently results. They produce nausea, heat, and pain in the stomach and bowels, thirst, vomiting, griping, and purging; in severe cases, convulsions and lividity are frequent, with small and frequent pulse, delirium, dilated pupils, and stupor, followed by cold morbid and death.

**Treatment.**—Here again the scientific treatment of the books is almost entirely calculated to make a very bad rather very much worse: "emetics of tartar emetic, followed by large doses of Olibanum or Epsom salts." As these drugs have no antiseptic property in the chemical sense, unless their employment is powerfully debilitating, they are an injudicious selection for puking or purging purposes as it is possible to make. Warm water and the stomach-pump, with copious tepid injections, are our more rational practice.

**POISONOUS FISH.**—The kinds of "sea-food" from which poisoning most frequently happens, are, the *crabs, mussels, old-wife, yellow-billed egret, land-crab, gray-cropper, dolphins, lyre, mackerel, blue-point fish, smooth-bottle fish, grouper, rock-fish, barracuda, king-fish, Spanish mackerel, parrot, brocton blower, tanny, etc.* The symp-

mark of poisoning usually appears in an hour or two after eating them, but sometimes in a few minutes after the meal is finished; a weight at the stomach is at first felt, with slight vomiting or headache; these are followed by a sense of heat about the head and eyes, great thirst, and an eruption of the skin resembling urticaria, or nettle-rash.

Treatment.—This has already been given under the head of *erythema*.

SERPENTS AND INSECTS.—Those serpents and insects whose bites or stings are poisonous, are, the copper-head, moccasins, viper, black viper, water viper, rattlesnake, Spanish or blistering fly, potato fly, tarantula, scorpion, hornet, wasp, bee, goat, and gad-fly. All the symptoms are those of violent internal and external erythematous inflammation, and the treatment may be found also under that head.

## PART VII.

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### SURGERY.

**DEFINITION.**—Surgery is either medical, mechanical, or operative. According to the old school system, medical surgery comprehends the internal administration of drug-remedies, and the external application of lotions, liniments, poultices, plasters, etc. In the hydropathic system medical surgery is limited to the internal and external employment of water of every temperature, from steam to ice, as the indication is to induce relaxation or excite contraction; the internal administration of chemical antidotes or correctives in cases of poisoning, and the local application of astringents, caustics, and escharotics, for the purposes of constricting bleeding vessels, removing preternatural formations, or destroying infectious matter, and protecting abraded or ulcerated surfaces from atmospheric and stercoral adhesions. Mechanical surgery is applied to the replacement of displaced parts. Operative surgery comprehends the removal of mechanical or chemical obstructions, and morbid structures.

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### CHAPTER I.

#### MEDICAL APPLIANCES.

It has been said that a good workman requires but few tools; a good doctor needs but few medicines, and a good surgeon requires but a very small part of the multitudinous instrumental apparatus which the inventive genius and manufacturing interest of the age has brought into use.

The essential pocket-case of instruments, with tooth-forceps, ligatures, list, adhesive plaster, sponge, bandages, male and female cath-

tees, the stomach-pump, and the press-springs, are all the emergencies demand to be kept always in readiness.

The necessary mechanical, medical, and chemical appliances—rejecting all internal drug-mechanism—are, the compress, ligature, sponge, adhesive plaster, lints and plasters, dry-capping, bandages, splints, crutches, syringes, towels, the tourniquet, refrigeration, fumigations, vesicator, anæsthetics, narcotics, and transfusion.

**THE COMPRESS.**—This is employed to equalize pressure under a roller or bandage, or increase the pressure at a particular point. It is made of several folds of linen, formed into a kind of pad; various shapes and thicknesses of compresses are employed, to suit the particular locality and circumstances. For applying around a neck, the perforated compress is contrived with a hole in the centre to permit the escape of matter. In Water-Cure practice a wet cloth is often called a compress; but in the strictly surgical sense, a compress is connected with the idea of compression.

**THE LIGATURE.**—Various kinds of strings or ligatures are employed to arrest the bleeding from wounded or divided blood-vessels, check the venous circulation so as to retard or prevent the absorption of poison, as in the case of bites of venomous animals, remove tumours, &c. Silk, linen, and animal membrane—cat-gut—are the materials in use. The latter is preferable, especially for tying bleeding arteries or veins, as both ends may be cut off close to the vessel, and the rest left to decomposition and absorption. In applying the ligature to wounded vessels, the surgeon's knot—the first knot having two turns—must be tied, as this prevents the last knot from slipping while the second is being tied. The bleeding vessel should be gently raised with the forceps or forceps, and the ligature drawn on tightly as may be without cutting through the coats of the vessel. Silver wire is sometimes used in ligating polypus and other tumours.

**THE SUTURE.**—For surgical purposes the finest and softest article is the best. It is used to suture the blood and other fluids from wounds and ulcers, and to support temporarily prolapsed parts, as the uterus.

**ADHESIVE PLASTER.**—This is employed to retain divided parts in position; to afford mechanical support to relaxed and diseased vessels, as varicose veins; to excite absorption by compression, as in infected ulcers, and protect divided surfaces. In dressing wounds, it is applied in narrow strips, with interstices for the discharge of matter. For



small cuts or abrasions, the collodion is the most convenient article, and for very small wounds or tears the gauze-net or cast-plaster is sufficient. Where adhesive plaster is to be applied, the hair should be shaved off.

**TENTS AND PLUGGETS.**—These are conical or cylindrical masses of *charpie*, or prepared lint—lint made by scraping the fine nap from old linen—or sponge, moss, wool and forms of which are called *wicks*, *rolls*, and *plugs*. They are employed to keep up a discharge from a fistulous or sinuous ulcer, so as to secure granulation from the bottom of the sore; to introduce canulas and irritants; to absorb matter, &c. *Tampons* are large tents, for making pressure or applying distention to strict hemorroids. The sponge-tent is the most convenient when absorption is desired; the common puff-ball, or silk pocket handkerchief, are frequently employed in stricture hemorroids.

**DRY-CUPPING.**—The application of any convenient vessel, as a common tumbler, to the surface, in which a piece of cotton is burned to produce a vacuum, is employed to diminish the circulation in the adjacent vessels, and to abstract the irritation of an inflamed part, on the principle of counter-irritation. This process is preferable to local bleeding—wet-cupping—and generally produces momentary relief of pain. But I regard it as hardly worth retaining for such purposes, for the reason that cold applications to the part, with warmth if need be, at a remote part, is a better resource in nearly if not quite all local inflammations. Dry-cupping is a valuable resource in reducing inguinal and femoral hernia.

**BANDAGES.**—The most extensive use of bandages is to maintain the fragments or parts of broken bones in juxtaposition during the healing or healing process; to give support to parts after recent dissections; to promote circulation, and prevent accretion in chronic swellings of the lower extremities, as in colera, varicos, old, deep, indolent ulcers, &c. The best are made of firm, smooth, unbleached linen cloth, torn into narrow strips, and sewed together by overlapping the ends so as to avoid a seam. The bandage must always be smoothly and evenly applied, and great care must be exercised to avoid drawing it tighter above, or toward the head, than below, as congestion and swelling will result from obstructing the circulation.

Figure 138 shows the manner of applying the roller to the lower extremity. It is about two and a half inches wide; and, commencing at the extremity of the great toe, takes in the second toe at the second

1816, the third lies at the third turn, and so on; compresses are placed in the depressions about the splint, so as to preserve equal pressure,

Fig. 20.



APPLICATION OF THE SPLIT.

each layer overlaps the preceding two thirds or more of its width, and the whole is applied smoothly from the toes to the knee. Just above the ankle, where the limb is tapering, it has to be folded over itself, and its direction frequently changed to preserve its evenness of application.

**SPLINTS.**—These are employed in cases of fractures, and sometimes to correct deformities. They are made of thin pine or poplar, cedar or linnseed boards; or better still, by saturating woollen cloth with castor oil. They must, of course, be shaped to the part to which they are intended to be applied, and padded with lint, cotton, or lined with soft sheepskin or buckskin.

**CASES.**—The red-hot iron, called the actual cautery, is sometimes resorted to for the destruction of morbid parts; but more commonly some chemical substance, called the potential cautery, is employed. *Caustic potash*—*potassa fusa*—is in general used as a strong, and the *angular carbonate of potash* as a mild caustic. *Nitrate of silver*—*lunar caustic*—*nitric acid*, and *sulphate of zinc*, are frequently employed. Preparations of antimony, arsenic, and mercury, are favorite escharotics and caustics with allopathic practitioners, but they have already done mischief enough to enable them to future abstinence. Mild caustics will generally remove callous or fungous growths without destroying the healthy structure; and the strong is necessary when the healthy parts are so involved with the disease that some portion of sound structure must be sacrificed to get rid of the morbid. Fortunately this necessity is of rare occurrence.

**SUTUREs.**—*Stitching* divided parts together is much less practiced now than formerly—superior skill in the arrangement of bandages and adhesive straps having superseded, in a great measure, its necessity. Sutures are usually employed to restrain the mobility of parts, and prevent permanent contraction of the tissues, in situations where straps and bandages cannot be well applied. The curved needle should always be passed from within the wound outward, and take up but little more than the skin. The twisted suture is employed for the double purpose of adaptation and compression. After the needle or pin has transfixed the lip of the wound, the thread is applied in successive coils round under the point and back, as in fig. 131. The interrupted suture is made by passing the threaded needle through the edges of the wound, at short distances, and then removing the needle and tying the thread. In the *dry suture* the needle is passed through moist bands of adhesive plaster, which are placed above and below the wound.



TWISTED SUTURE.

**TORQUEs.**—This process merely consists in getting hold of the extremity of the bleeding vessels with a pair of forceps, and twisting them. It stops the bleeding of small arteries, and is as far as adequate for tying.

**The TORQUEQUE.**—This instrument is a form of ligature, and is calculated to compress large and deep-seated arteries in aneurisms and other exigencies. The pad or compress is applied directly upon the artery above the injury or operation, and pressed upon the vessel until the pulsation of the artery beyond is suppressed by turning the screw. A



THE TORQUEQUE.

good substitute for the common tourniquet may be made in a number of various ways. A

Fig. 132.



MANCHESTER ADAPTED.

which the knot is applied, as in Fig. 133.

bandkerchief, tied twice round the limb, may be twisted with a stick until the pressure stops the current of blood in the artery beyond

**COOPELATION.**—In deep-seated chronic inflammation, especially around the joints, absolutely freezing the part, by means of powdered ice or refrigerating mixtures, has been attended with the happiest consequences: the application should never be continued but for a few minutes at a time. It is also one of the means for restraining hæmorrhage. Severe cold has been employed to remove the sensibility, preparatory to surgical operations; and the testimony is unanimous that, in every instance "the wound has appeared to heal more speedily than under the usual circumstances." Dr. Arnott has used frigorific mixtures as anæsthetic agents in nearly two hundred cases without any injurious consequences; and he reports that foul ulcers are often changed to healthy ones by their action. A piece of ice dipped in salt, and applied to the part, produces coagulation in about half a minute. Pieces of ice mixed with common salt and nitrate of ammonia, make a still stronger frigorific. It should never be applied to a very large surface at once.

**FUMENTATIONS.**—These are intended to abate morbid sensibility, and relax the whole or part of the muscular system, to excite suppuration, and facilitate the replacement of dislocated joints, fractured bones, ruptures, &c. All the muscular relaxation which regular vigorous endeavor to produce by profuse bleedings and diaphoretic nunciations, can be readily and harmlessly produced by the internal and external use of warm water.

**EMETICS.**—In many cases of rigid insensible contraction, to facilitate the reduction of a dislocation or the replacement of the fragments of fractured bones, powerful and injurious doses of tobacco or tartar emetic are administered to induce greater relaxation; or the patient is kept for a long time in a state of excessive nausea. Warm water, taken copiously into the stomach, assisted by licking the throat with



usually, will answer all the purposes for which so many deathful drugs are employed, especially if combined with external frictions or the warm-bath.

**ANÆSTHETICS.**—Chloroform and ether are just now in common use to produce insensibility, and thus obviates the pain attending surgical operations; and many surgeons accordingly administer chloroform to lessen or obviate the pain in nearly all cases of parturition. They are not without danger, and the introduction of these agents into ordinary obstetric practice is to be repudiated. When an operation is exceedingly dangerous, painful, or protracted, the employment of anæsthetic agents is certainly commendable; and, although we have accounts of some thirty deaths occurring from their direct effects since their introduction into surgical practice, yet I suspect that some of these deaths at least, were attributable to a want of the proper precautions, or rather an ignorance of the proper precautions on the part of the operator. The same rules should be observed in administering chloroform or ether, as are enjoined by hygieine in administering a full-bath. The stomach should be empty; the patient in his ordinary quiet or composed state; that is, without rush of blood to the head, or determination to the brain; the extremities must be warm, and a general glow upon the surface, &c. The ether is the safer article, but the chloroform is the most powerful. In many cases magnetism will produce the desired insensibility, and when the patient is susceptible, this process is always to be preferred.

**HÆMANTASTIC.**—This process has been employed in the treatment of local congestion and inflammation; but we have, in water of various temperatures, an simple and a better resource. It is a valuable expedient, however, in some cases of sudden and alarming hæmorrhage, as it enables us to retain a greater proportion of blood within the body, and also to lessen its impetus at the bleeding point, thereby favouring the formation of a clot or coagulum. Dry-cupping an entire limb, for which purpose elongated cylinders of flexible material have been invented, is one method of holding back its blood. The common ligature round the limb is equally efficacious.

**TRANSFUSION.**—In some cases of excessive loss of blood, life has been preserved by opening the vein of a healthy person, or of a sheep, and transferring the blood immediately into the vein of the bleeding patient, a suitable vessel or funnel being connected with the latter for the purpose of receiving it.

## CHAPTER II.

## WOUNDS.

**DIFFERENCES OF WOUNDS.**—The usual division of wounds is into incised, punctured, penetrating, contused, lacerated, gunshot, and poisoned. An *incised wound* is a simple cut made, of course, by a sharp-edged instrument, as a knife, razor, &c. A *punctured wound* is made by a sharp-pointed instrument, as a revolver, &c. A *penetrating wound* is a larger puncture, as by a bayonet. A *contused wound* is occasioned by a blunt instrument, as a stone, club, &c., which injures the parts below the surface, the skin remaining entire. A *lacerated wound* is inflicted by an instrument which is both blunt and rough, and which tears the integument as well as injures the parts beneath it. *Gunshot wounds* include all injuries arising from substances impelled by the explosive force of gunpowder, as leaden bullets, cannon balls, stones, &c. They partake of the character of both punctured and lacerated wounds. *Poisoned wounds* are the injuries inflicted by insects, reptiles, rabid dogs, &c., whose stings or bites are accompanied with the introduction of a specific virus.

**GENERAL CONSEQUENCES OF WOUNDS.**—*Bleeding* is the only alarming symptom in incised wounds, which can generally be checked by the "first intention," that is, without suppuration. All the other varieties are attended, even when very large arteries are torn, with but little hemorrhage, but always suppurate more or less. In gunshot wounds, the concussion of the air impelled by the ball often inflicts severe injury, without making any mark upon the skin. In most wounds there is more or less *extravasation*, or an infiltration of blood into the cellular membrane. The pain is generally in the inverse ratio to the danger, for the reason that the more destructive the injury, the less power has nature to give the alarm. The danger of wounds, other circumstances being equal, depends on the actual health, or physiological state of the system at the time the wound is received. The most trivial scratch, or the simplest cut, has been followed by bad sores, loss of limb, and even life, in persons of extremely morbid blood, fed on greasy and unwholesome food, and debilitated vitality; while those of sound, pure blood, recover from the most complicated injuries with comparatively little dif-

fekky. Sprinklings and leech-blisters are uncommonly liable to extreme inflammation, but ulcers, mortification, etc., from injuries which water-draws might regard as trifles.

**TREATMENT OF WOUNDS.**—The first point in all cases, is to control the hemorrhage. *Arterial bleeding*, which is always far the most dangerous, may be known by the bright scarlet color of the blood, and its issuing in jets. It may be stated as a general rule, probably an invariable one, that all hemorrhages from blood-vessels below the wrist and ankle, can be arrested without ligating the arteries. The injured part should be freely exposed to the cold air, and washed in the coldest water. In many cases the bleeding from small vessels is kept up by the dressings—covering the wound with compresses, lint, etc., which keep up the heat, and prevent the formation of a coagulum. I have known a deep wound in the thigh, made by a piece of glass, bleed for several days in spite of lint, and sutures, and bandages, and cease entirely on being laid open with a scalpel with a view of tying the wounded artery; which, by the way, was not found. In some cases the wounded artery can be compressed by the finger, as the radial artery in fig. 134. If the pressure must necessarily be kept up a long time, a piece of soft rag several times folded may be placed over the aperture, and secured by a piece of broad tape, bandage, or pocket handkerchief, as in fig. 135. When internal bleeding occurs, known by paleness, faintness, etc., sips of the coldest water or bits of ice should be frequently swallowed, and absolute quiet enjoined. Blood-coagulating the radial artery, lig from large arteries must be controlled by the tourniquet, and the artery ligated. When the bleeding is from the upper extremity, the brachial artery must be compressed above the middle of the arm; and if from the lower, the femoral artery should be compressed just below Poupart's ligament.

The *coagulation* and *inflammation* which may attend all wounds rarely require frequent changes of the water-dressings; and when the inflammation of a wound has extended to the neighboring glands, producing painful

Fig. 134.



Fig. 135.



THE MUSCLES CONTRACT.

The *coagulation* and *inflammation* which may attend all wounds rarely require frequent changes of the water-dressings; and when the inflammation of a wound has extended to the neighboring glands, producing painful

wrappings, these should be kept well covered with several thicknesses of wet cloth.

The highest of foreign substances in wounds is to be removed by introducing the finger or a probe, and extracted if possible; but, moreover, until all danger from hemorrhage is past, and when poisonous substances are introduced in the flesh, more or less antiseptic solutions should be frequently applied.

In suppurating wounds the edges must be kept apart, to allow free access to all matter that may form within; and if the granulations, in the healing process, grow above the surface, and become loose and fatty, containing fungus or *pus* or flesh, strips of adhesive plaster or collodion should be applied to act as a compress. In bad cases caustic pencils may be necessary.

*Secondary hemorrhage* is liable to occur in lacerated wounds from the shodding of large arteries; and in bad cases, gangrene. They require the coldest water-dressings. The moderate douche is excellent in common wounds; and when they become irritable and painful the part may be bathed in warm water, followed by the cold compress. The absorption of extravasated blood may be promoted by the cold stream and cold wet compress.

The general treatment of poisoned wounds has been detailed in the preceding part of this work.

## CHAPTER III.

### TRUIMA.

*Concussion*.—A *stunning*, or *extrusion* of the brain, is the result of blows upon the head, or of falls, which so shock the whole system as to occasion a temporary suspension of consciousness. The extent of the injury cannot be known, nor is it material that it should be until the patient "comes to." It may be so severe as to produce instantaneous death; or so slight as to leave no apparent ill consequences.

*Treatment*.—Perfect quiet, and a careful attention to keep up the general circulation and normal temperature, are the principal remedial resources. The extrusion must be kept warm, and stimulents should be had over the head, and if the concussion is prolonged, the bowels may need evacuating by means of injectives, and the urine require to be drawn off by the catheter.



The old practice of bleeding, which I am sorry to know is also a common practice with modern allopaths, has no better effect than to lessen the patient's chance of recovery. Indeed, this has been the opinion of some of the best European surgeons for the last fifty years, and a majority of all modern authorities is against the practice; be sides, it is in itself at variance with common sense, yet our doctors continue the killing practice of letting bleed as though there were some scientific reasons for it!

**CONCUSSION.**—This is usually the result of concussion, and its immediate cause is an extrusion of blood within the cranium; or some collection of other matter; or increased pressure from a depressed or broken part of the skull bones. It is denoted by continued pain in the injured part of the brain, with cerebral disturbance; as, in the absence of these, imperfect feelings, speech, disordered vision or hearing, with tremor and vomiting. The patient is often also comatose.

**TREATMENT.**—When a portion of the cranium is depressed it must be raised by a lever; or if this is impracticable, the operation of trephining will become necessary. The head should in all cases be kept thoroughly cooled with wet cloths or the pouring-bath, and derivative treatment, especially tepid, hip, and foot-baths should be frequently employed, caution being taken to secure prompt reaction. In extreme cases, hot foot and leg baths are useful, especially when the patient is affected with delirium or coma. In young persons very bad fractures of the cranial bones will often repair themselves if the general health is well attended to.

**BURNS.**—These are only worth naming for the purpose of mentioning that the cold douche, and the wet compress, are worth more than all the misvaluing treatments and applications in the world, in their treatment.

**SPRAINS.**—These accidents usually happen to the smaller joints, as the wrist, fingers, ankle, and toes; they are generally exquisitely painful, and are very liable to be followed by painful and protracted inflammation. The part should be held in cold water, or the cold stream applied to it until the violence of the pain abates, and then wrapped in wet compresses until all inflammatory excitement is passed.

**BURNS AND SCALDS.**—Burns are produced by the action of concentrated heat upon the living tissue. Scalds are produced by the application of a boiling or hot fluid. The danger of these injuries is usually

measured by the extent of surface destroyed. Surface may be three, four, five, and sometimes six degrees of burn; but the smallest number is sufficient for all practical purposes. The first is redness, or *erythema*; the second, *pebulation*, or *blistering*; and the third, *disorganization*, in which the skin is destroyed, and perhaps some structures beneath the skin. The pain is usually the severest in the second variety. Superficial burns or scalds are easily healed when not mistreated; but deep burns, as by a hot iron, usually leave an ugly scar. Many terrible burns are frequently taking place by the carelessness of women, children, and servants taking fire from carelessness in handling tapers, burning fluid, tea-kettles, coffee-pots, etc.

*Treatment*.—When one's clothing is on fire, the first thing to be done is to extinguish the flame; and as the surface might burn to death before a supply of water could be obtained, the flame should be suffocated by covering the patient with a blanket, carpet, or some similar

Fig. 105.



article, as represented in fig. 105. The next point of treatment is to immerse the injured part in water, or cover it with wet cloths of the temperature which feels most agreeable to the patient. The coldest water will prove the most soothing at first; and in a longer or shorter time, according to the severity of the inflammation, tepid water will be found most sedative; and finally warm water will often feel the best. But the rule is variable; follow the sensations of the patient. When the skin is excoriated, it should be kept covered with soft linen. The blisters which form should not be punctured or torn until suppuration has taken place on the surface, as they form the best protection to the injured surface.

As the contact of the atmosphere, or rather of a colder medium, is extremely painful to the raw surface after the skin or mucus comes off, the room should be kept quite warm, and all appliances should

them be moderately warm. The best covering in this condition is simple flour, dredged over the surface, allowed to remain until it becomes hard by the putrescent matter beneath, then removed, the surface gently washed with warm water, and more flour applied. A soft cloth may be placed over the flap and kept constantly wet with water; and the flour-dressing may be renewed until restoration is completed. I have seen very bad burns heal rapidly and admirably under this arrangement; starch, and finely-powdered slippery elm bark—also flour—are favorite applications with some practitioners, but I know not that they have any advantage over the common flour.

There is always a considerable degree of constitutional disturbance after a severe burn, as rigors, oppressed respiration, small, weak pulse, followed by more or less febrile reaction. This requires warm hip and foot-baths, when practicable, during the period of chilliness, and rapid abstinence during the febrile stage; the room should always be kept considerably warmer than in cases of the same violence of fever from any other cause.

The allopathic treatment of burns and scalds is a singular jumble of the "good, bad, and indifferent." Professor Parker, of this city, after telling us that "the treatment of scalds and burns seems to us to be universally respected in all our systematic works on surgery," gives us a rational basis of treatment. This is "the use of such agents as are calculated to meet the existing ability." "The most prominent of the local and constitutional symptoms is great nervous prostration." On this basis the professor recommends warm, briskly and *freely* of opium to get up reaction; and then antimony, *Dose's powder*, *calomel*, and *ipécacuanha*, to get the reaction down again; or, in his language, "regulate the reaction, that it may not run too high." "General bleeding," he continues, "is commonly indicated by the great tendency in such cases to a typhoid condition of the system." Bleeding indicated because the nervous system is prostrated, and the whole system in a sinking condition! Is not this pre-eminently empirical?

Among the signs of burns and scalds, are contractions of the skin and adhesions around the tendons, producing *distortions* and *deformities*. These must be prevented, as far as possible, by maintaining the normal position of the parts during the healing process. Dr. Parker remarks: "When these scalds and burns are upon the trunk, and there has been a copious suppuration, unless we are guarded in our treatment, as desiccation takes place and the secretion is diminishing, there will occur suddenly and unexpectedly, effusion upon the brain or lungs, and death." The way to "guard" against such disastrous results is, by making the dressing and bleeding part of the treatment.

**PARTICULAR WOUNDS AND INJURIES.**—*Fracture*—*phlebotomy*—is a wound made by puncturing a blood-vessel with the point of a lancet, a ligature having been previously applied between the external wound and the heart. Some one of the veins on the external side of the face-arm, next the elbow, is usually selected; but occasionally the external jugular vein, the vein of the foot, and the temporal artery are opened. The consequences of this operation are, 1. Loss of blood, which is irremediable. 2. *Echymosis*—a brick-bred tumour, occasioned by an extravasation of blood into the cellular membrane, is consequence of the wound in the vein not exactly corresponding with that in the skin; it requires the cold douche and cold compression. 3. *Aneurism*—an arterial swelling, produced by pricking through the vein into the adjacent artery, or wounding the vein with the point of the lancet and hitting the artery; this requires the operation of ligating the artery above the injury. 4. *Lock-jaw*—produced by pricking or dividing some nerve in the vicinity of the repeated cold; it requires the treatment heretofore mentioned under the head of Spasmodic Diseases. 5. *Phlebitis*—inflammation of the veins of the wounded part, of which this operation is the exciting cause; this requires the wet-sheet pack, with wet cloths to the inflamed part. 6. *Fainting*—which results from the abstraction of a large quantity of blood, or from a less quantity suddenly withdrawn by making a large crisis; the treatment has been described under the head of Syncope.

*Leeching and scarifying* are among the common injuries which modern surgeons are fond of inflicting upon afflicted humanity. The most mortal consequences are, inflammation of the skin and adjacent blood-vessels—*ecchymosis* and *phlebitis*—dangerous *hemorrhages*, and *venous ulcers*. For all these "accidents," the cold water is the best remedy.

*Wounds of the throat*, of which throat-cutting is the most prevalent example, present every degree of severity and danger, from a mere scratch through the integument, to a division of the jugular veins, wind-pipe, and carotid arteries. The principal danger is from hemorrhage; and all the vessels which bleed freely, whether arteries or veins, must be taken up and tied; after which the lips of the wound are to be retained together with both sutures and adhesive straps.

*Wounds of the scalp* are liable to be followed by erysipelatous inflammation; the hair must be shorn, and the divided parts brought as precisely by adhesive straps, and sutures when necessary.

*Wounds of the chest* are apt to penetrate the substance of the lungs, in which case air and blood together will bubble out of the wound, and the patient will manifest short breath and lively expectoration.



The wound should be covered with a plaster, and cooling derivative balls—bat and lip—employed.

Dr. Hill, author of an excellent surgical work (*Arctic Surgery*), makes the following pertinent remarks in relation to the bleeding practice in this case. "Flebotomy is recommended in the books 'to divert,' as they say, 'the blood from the lungs.' But surely it is as well to bleed to death through a wound in the chest as through one in the arm! We are told that the bleeding 'can hardly be carried too far; for if the patient be not relieved by this measure, no other can possibly ever him'" (*Ibidem*, vol. i., p. 115). The reason given for bleeding, in such cases, is so stated as this passage reads:

"Wounds of the abdomen are among the most dangerous. When the intestines are wounded, the patient is affected with nausea and vomiting, and the matters ejected or rejected will be bloody. When a portion of intestine protrudes, it must be reduced as soon as possible; if this is not done within forty-eight hours, adhesions may form and render it impossible. When the protruded bowel is distended with gases or feces, by which its return is hindered, these may be pressed forward with a portion of intestine within the abdominal cavity; or, if this measure fails, the wound must be dilated. These wounds, when large, may require the suture; a fine needle and thread only should be used. For several days after severe injuries of the bowels or lungs, the patient should eat little or nothing, and the bowels be moved, when necessary, by warm injections.

Wounds of the joints are liable to be followed by severe inflammation, terminating in adhesions and ankylosis, or stiff-joint. The limb should be kept in the easiest possible position, perfect quiet observed, and cold-water dressings be continuously applied. The eastern disease, called in some late books *syphilis*, is a chronic inflammation of the synovial membrane, and to some extent of other structures of the joint, and is produced by some external injury. I have seen several cases affecting the knee-joint, produced, more impressionably, by wearing strapped pantaloons. *Syphilis* is known by a sense of weakness or lameness in the affected joint, always increased by any considerable motion, and frequently amounting to pain when the exercise is prolonged. There is usually some, or but slight, external swelling, swelling, or heat. This affection requires a long time to cure; the remedial plan consists of a very strict dietetic regimen, one or two general baths daily, with the constant application of local expressions, and occasional shallow foot-baths. When the knee-joint is the seat of the disease, the roll leg-bath should be employed for half an hour once or twice a day.

## CHAPTER IV

## TUMORS

Every tumor is a morbid swelling or a new formation—an increased or perverted development of organic substance. The common causes are injuries, as burns, lacerations, etc., although it is seldom that we can trace any particular tumor to the particular accident from which it originated. They may also arise from capillary obstruction, and this is induced by many of the unhealthy eating, drinking, and anti-bathing habits of society. A mechanical injury of the vessels of a part, or a long-continued inflammation or obstruction, may produce a change in its nutritive function, by which an abnormal structure is developed; and when once this perverted action commences, it may progress to an indefinite period of extent. In their incipient stages they can frequently be removed by strong leeches, cold compresses, and continued compression. Tumors are distinguished into adipose, cellular, fibrous, cartilaginous, osseous, cartilaged, fungous, vascular, malignant, pulsating, vascular, etc., according to the structure affected, and the form, character, and consistence of the swelling.

The other surgeons divided tumors into circumscribed or fleshy—comprehending those which are composed of fatty, fibrous, vascular, fungous, or other substance softer than bone; cancer or long; auto-matous—when swelling both the bony and fleshy structures; and encephaloid—containing a fatty or fluid substance within a globular cyst, as is the case of wens and hydatids.

Adipose tumors are collections of fatty matter enclosed in a cyst or sac of condensed cellular membrane, which renders them also encysted tumors. When filled with a meat-like matter, they are called steatomata; when containing a honey-like substance, melicerata; and when their contents are a jelly-like fleshy matter, sarcomata. They are not painful, and only inconvenience the patient by their bulk, weight, or pressure. They are easily removed by making a T incision through the skin, and carefully dissecting around them to detach the cyst from the surrounding structures. They may be removed by the "eight-tailed ligature," fig. 117, two needles being drawn through the outer side of the tumor, reaching each other at right angles, and each carrying a double ligature; the loops are then cut, and the ends tied in four knots, by which the tumor is completely strangled. These tumors do not reappear after having been entirely removed.

*Fibrous tumors* are composed of bundles of greater or less density, inclining yellow or whitish, gelatinous, divided into lobes or septa by cellular substance; their shape is irregular, and they have a doughy consistency. They are not painful, and are easily removed by the ligature or knife, being almost always situated in accessible places. The



FIGURE OF A FIBROUS TUMOR.

fibrous contents of these tumors adhere so closely to their capsules that they can readily be removed by the finger or forceps on making an incision through the skin.

*Cellular tumors* are smooth, firm, and composed of compact layers of areolar tissue, containing, in this case, abundant fibrous, and sometimes osseous matter. They are never painful except when inflamed. The extensive veins involved in the tumors may become varicose, and when stressed veins, sloughing and fungous growths are apt to follow. Excision with the knife is the best treatment; but when sloughing takes place the mild caustic is necessary; and the strong caustic when fungous appearance prevails.

*Favicular tumors* are limited, in surgical technology, to those morbid developments of erectile tissue called *verru* *matron*, or *excrescence* by anatomists; and these may be *superficial* or *subcutaneous*. The proper plan of treatment consists in the destruction of the morbid corpuscles of blood-vessels in such a manner as to avoid hemorrhage. Repeatedly puncturing the part with hot needles, and the repeated application of caustic, a small part of the surface only being touched at once, with exact but moderate compression, have each succeeded in removing these.

The character of the other varieties is sufficiently indicated by their name, and the treatment will be given under the head of particular tumors.

**WARTLE—TORTUOUS.**—This affection is a stationary, tubercular, non-suppurative tumor, generally found upon the face. It comprises the varieties called *verru* *pus*, and *carcinoid* *face*, or *very* *drop*—*gout*.

root. *Shoon* pock is a plainly eruption of hard, red tumors, which are more in the neck, and even a little fixed at the top, or a grub-like excrescence of masses. In the *varietal* variety the tumors are confluent, and mottled with purple, often disfiguring the nose with pock-like holes, and marking the face, as Shakespeare has it, with "blisters, and whores, and knobs, and flames of fire." In Ireland, the common name for these protuberances is *grog-blossoms*; in this country they are known as *ram-blossoms*, *grog-rings*, *riders-hair*, *luteo-ferrus*, etc., while their possessors are honored with the appellations of *copper-board*, *holly-hoax*, etc.

*Special Cause*.—Grog-eating and "hard-drinking."

*Treatment*.—Few individuals, distinguished by the characteristic variety of the whiskey tumor, can be expected to submit to *non-treatment*; and, moreover, these patients have the same reason to regard their "nose" and "blossoms" as badges of honorable distinction, that the Englishman has his gypsy boat and stomach, or the Polynesian Islander his enormously misshapen leg. All alike can boast of "high living." But if we should be called upon to indicate a remedy, we might with all propriety suggest the details of a "sober and temperate life."

*Sycosis*.—This term has been applied to a fig-shaped tumor, a fungous ulcer, and a hairy excrescence about the eyelids; but usually and here it is employed to denote an eruption of inflamed tubercles on the scalp, and on the bearded portions of the face. These tumors often ulcerate and discharge an ichorous or glaucous matter. They are connected with uncleanliness in either the position or ungroomed beard—bad diet or drink, or the abuse of wine, and may be cured by thorough local and general bathing.

*Warts*.—*Verrucae*.—These are rather excrescences than tumors; some are smooth and apparently filled with fatty matter; others, called *seed-warts*, are rough, hard, and invariable. Some warts secrete a fluid which is infectious, and will produce a *crop* on other persons or on other parts of the same person. They may be effectually removed by caustics—potash, nitrate of silver, nitric acid, or nitro-muriatic acid. The latter preparation is the best; it may be applied by means of a pointed piece of wood to the centre, taking care not to let the acid come in contact with the surrounding structure. To prevent this, a piece of perforated adhesive or oint-glass may be placed around the wart. The acid may be repeated until the troublesome and unsightly excrescence is entirely destroyed, which will usually require but a few days.



**Corns.—Corns.**—These well-known excrescences are produced by tight shoes or boots. The first principle of cure is to give the feet a respectable amount of freedom; and the second is to soak them in warm water, and shave off the horny substance, and then touch them with the silver or nitro-muriatic acid. When the corn is inflamed or highly irritable, the tepid foot-bath should be employed to remove this condition before the acid is applied. The silver nitrate—nitro-muriatic acid—is the ordinary secret remedy of the "corn-curer." When the corn is fully formed, or ripe, a membrane separates it from the true skin, so that it can be taken off without injuring that surface; and this circumstance enables professional sharpshins to elevate the "grain" on the point of a pen-knife, after an application of the acid.

**Brooms.**—This affection, though generally regarded as a variety of corn, is really an inflammation and swelling of the bursa serosa, at the inside of the ball of the great toe; it often produces a distortion of the metatarsal joint of the great toe, and is produced by the same causes as corns. The treatment is, warm foot-baths, when this part is very tender and irritable; at other times, frequent oil-baths; and when a horny substance resembling a corn appears externally, the application of caustic. I have known bad corns and brooms come to be troublesome after the patient had been a few months under hydropathic treatment for other complaints.

**Overshoots.**—This distressing affection, sometimes known by the dismaying synonym of *onychogryphus*, consists in an incursion of the toe nail from a laceration or the pressure of a tight shoe, producing inflammation and ulceration, and followed eventually by dangerous growths, or proud flesh, which is exceedingly tender and painful. The cure is slow but certain. The foot must be frequently soaked in warm water until the nail grows in as far almost that it can be handled without pain; then with a pen-knife press pledges of tin as freely as can be borne under the most detached point of the toe nail, pressing them also between the nail and projecting portions of the flesh as far as possible. Cover them with the wet compress, and apply a moderately-tight bandage over the whole, frequently wetting the whole with warm, tepid, or cool water, as either temperature is most agreeable. The tents are to be pressed further and further under the nail from time to time, and the foot should be soaked and dressed once or twice daily. When portions of the nail become free they may be cut off, and mild caustics may be employed to remove fungus or inlaid growths, which do not yield to the other measures of treatment.

**GANGLIOMA.**—These are encysted tumours, formed of a thick albuminous fluid, resembling the white of an egg, and varying in size from a pea to that of an egg. They are hard, globular, and without discolouration of the skin. Sometimes the cyst is loose, but it most commonly communicates by a narrow fist-stalk, with the sheath of a tendon, or the synovial capsule of a neighbouring articulation. Ganglioma are always situated in the course of a tendon, and usually appear on the wrist, hand, and top of the foot. In their treatment surgeons have resorted to compression, punctures, decantent applications, extirpation, and caustics. When the tumour is prominent and raised, a single incision will allow its contents to escape, and if dressed with a uniformly tight compress, the wound will heal readily. I have always succeeded therein in this way, and never knew any injurious consequences to result from the operation. Owing and diffused ganglioma may be punctured with a blunt or revolving needle, and the fluid pressed out. When the cyst is thin it may be repaired by a blow or by pressing it firmly against the bone—in which event the fluid will be absorbed and a cure result; but whether the sac can be repaired with a safe degree of violence, can only be known by trial. Irritation or excitation, to excite suppuration, is a method recommended by some authors; it is applicable to tumours attended with ulceration or induration.

**RANULA.**—This is a small tumour under the tongue, resulting from obstruction of some one or more of the excretory ducts of the sub-mandibular or sublingual glands. It may be cured by clipping off a small portion with a pair of sharp scissors; and if it does not disappear in a few days, touch it with nitrate of silver or caustic carbonic acid of perch.

**EPULIS.**—A small tubercle of the gum, which generally appears above or below the incisor teeth, sometimes between a serious cavity. It commences with a small seed-like swelling, which grows so slowly and painlessly as to attract little notice; but at length it enlarges rapidly, becomes soft, bleeds on the slightest touch, discharges sometimes serous matter, involving the gum. Displacing the teeth and affecting the glands of the mouth and other soft parts, until the patient is distressed by hæmorrhage or even rot with irritation. The best surgical treatment the removal of the tumour as soon as its character is ascertained. The alveolar teeth must be first extracted. Sir Astley Cooper prefers the knife; but the cauterizing process is recommended by Dr. Hutton, I think, far preferable; it consists in destroying the tumour to its base, with every portion of the diseased structure, by means of

cattle punch, applied with discrimination and dropping like plaster—the surrounding parts, lips, tongue, etc., being protected by cotton wool in vaseline, rolled up and pressed toward the part to be cauterized.

In all cases of malignant tumors and ulcers, let me leave my voice for all a rightly chosen and exclusively vegetable diet is one of the most important, and frequently one of the indispensable measures of the rational cure.

**THYROIDITIS.**—This tumor, variously called goitre, or swelled neck, is a preternatural enlargement or hypertrophy of the thyroid gland. In its early stage it is soft and elastic; but as it advances in size it becomes firmer, and spreads toward the sides of the neck, attaining sometimes a prodigious magnitude. In the valleys of Switzerland, Germany, the Tyrol, Derbyshire, and some other places, it is very prevalent; most frequently, however, affecting young females. It is found in all parts of the United States, but more commonly in low, moist, marshy, or subarctic situations. In this country the disease seldom increases to a dangerous extent, the deformity being the principal source of complaint.

To treat this complaint successfully we must employ as powerful diaphoretics to the spine and to the tumor itself as the patient can conveniently bear, with occasional packings to the wet-sheaf, and a thorough course of derivative half, leg and foot-baths; and to this course of bathing must be added a plain, abstemious, and rather dry diet. The drop-bath for half an hour or longer, followed by the wet dressing, is among the promising remedial resources; and if there is the least tendency to suppuration, topical injections should be freely employed.

It is not a few years since *iodine* was the vaunted specific for this disease throughout the medical world; but it was found at length that a great many more constitutions were killed than benefitted were cured by the remedy; hence, no remedy more specific which ever has or ever will be got up on drug-qualification principles, is deserving a—*obituary*.

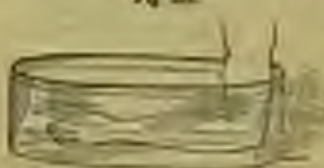
**PARONYCHIA.**—**WHITLOW.**—**FURUNCLE.**—An acutely painful inflammation, seated about the nails and ends of the fingers, has been called by these names indiscriminately; the term *paronychia* is applied to all phlogogenic tumors of the fingers and toes. In some cases the inflammation commences in the perionychium, and effusion takes place between it and the bone, constituting the worst or malignant form—the *osteitis*; in the triflingest solution the inflammation commences in the sheath of a tendon; and is a tumor called *tendonitis*, the effusion

occur in the subcutaneous areolar tissue, or between the skin and epidermis. Nodular inflammations are sometimes found about the palms of the hands and sides of the feet.

The severe and lacerating pain of paronychia tumors arises from the firmness and insensibility of the skin and other structures where it is seated, which act upon the inflamed vessels like a tight bandage, producing a most distressing sense of pressure; and hence it is that when the skin opens the soft parts below are pushed out like a fungus, and become exquisitely tender.

**Treatment.**—On its first appearance this affection may generally be promptly cured by immersing

Fig. 118.



ARM-BATH IN WHITLOW.

the whole arm in very cold water. The arm-bath, Fig. 118, should be frequent and prolonged. When discoloration of the skin indicates approaching suppuration, tepid, or even warm water to the inflamed part, with the cold effluvia-bath, will prove the most soothing

treatment. In the following twelfth it will save the patient much time and suffering to cut with a scalpel down upon the bone, making a free incision one or two inches in length.

**SCIRRHUS AND CANCER.**—I have already treated of cancers medically, but as many everywhere regard scirrhus and cancerous tumors as distinct diseases, while others treat of scirrhus as though it were the first stage or beginning of a cancer, it may be proper to consider both subjects connectedly in this place.

It is unquestionably true that all cancers are in their incipient stage hard, wiry, indurated tumors—*scirrhus*—and in their later stage, open ulcers—*carcinoma*. But it is equally true that indurated or wiry tumors often remain for an indefinite period in a condition of cartilaginous and almost stony hardness, without evincing any tendency to cancerous ulceration; and not unfrequently, when irritated or injured, degenerating into other malignant tumors, very different from true cancer. A scirrhus tumor, therefore, is not per se the proof of an approaching cancer. Indeed, some authors have grouped together scirrhus, medullary cancer, fungus hæmorrhoides, and carcinoma, as constituting species of the generic family of cancer. But it is enough for practical purposes, to know that a scirrhus tumor may become a cancer or may never malignant ulcer; and when the surface of the scirrhus is covered to the touch, the skin below and insidiously, with in-



regularly dilated veins, and twinging, gnawing, or burning pains, the cancerous character is clear.

*Diagnosis.*—Non-canceroid scirrhus, and all hardened but non-malignant tumors, are never preceded by any abscessed with part of the growth or incising blood. They present, also, a smooth and more united surface, with a manifest swelling in instead of out of the part in which they are found; whereas, in canceroid scirrhus, the part affected is condensed and really diminished in bulk.

*Treatment.*—Scirrhus or hardened tumors resulting from inflammation may be dispersed by the plan of treatment recommended for leucodermis. But the canceroid tumor in its early stage, may, perhaps, be treated with equal success by the knife or caustic; and in either case care must be taken to remove or destroy every vestige of diseased skin or affected flesh.

Open cancers can be and frequently are cured by a free application of caustic potash, although the operation is a painful one. Dr. Hibernia, in that earlier stage, the application of a pencil of potash, as is to excise completely as well as to open the cancerous mass, letting it penetrate into the very center from several different points; and if the patient cannot bear so extensive an application at once, the caustic may be applied to different parts from day to day. Between the operations this sore is to be covered with a poultice of slippery elm flour. In the open cancer the caustic potash is to be applied freely to the whole of the ulcerated surface; turning to the bottom of the tumor by striking the pencil in from different directions. When the scab has sloughed off, any remaining portion of the morbid growth should be touched with the caustic; and these applications are to be continued and repeated until all of the morbid structure is destroyed. During the healing process the sore is to be washed daily with the mild caustic—suspension of potash—to destroy the vitality of any remnant of cancerous mass that may exist, and prevent the development of more. The caustic application also of flour, starch, or slippery elm, stimulates the part, and thus prevents its corrosive effect. When this or any other operation is removed upon, the body must be prepared by a thorough course of hygienic living and dieting.

*Pyæmic Hematomas.*—This term means bloody fungus; the disease is sometimes called *vascular sarcoma*, *spongy degeneration*, *vascular tumor*, and *red tumor*. It commences with a small, elastic, movable, and easily movable tumor, under the skin, the integument itself being unaffected. Soon or later it becomes inflammatory, swells rapidly, the skin becomes discolored with purplish or red spots

and adheres freely to the diseased and colored part. Ulceration soon comes on; fleshy, dark, fungous growths spread out irregularly and at several points beyond the surface; the whole soon becomes exceedingly swollen, the top being much larger than the base; eventually the adjacent glands are affected, when the patient's general health rapidly declines.

**Treatment.**—When the lymphatic glands have become affected, the disease may be considered incurable. In its early stage, while the tumor is loose underneath the skin, and nearly free from active inflammation and tenderness to pressure, it may be destroyed by caustic or removed with the knife. The knife is preferable when the diseased mass is so situated that the whole can be removed at once. The excision should include every particle of morbid material; and to make sure of this the incision should extend some distance beyond all appearance of disease. When amputation is resorted to it must be managed, as in the case of common cancer, except that it is more important to destroy, if possible, every vestige of the diseased mass by the first application.

**BONE CANCER—OSTEO-SARCOMA.**—This disease, called *osteoma* by some authors, consists in the deposition of a flesh-like matter in the structure of the bone, producing a morbid enlargement. As the disease progresses, the internal structure is changed to a brownish, fleshy mass. When the swelling spreads on the surface, large quantities of pus of a white or less offensive or acrid character, are discharged. The affection is most frequently seen in the lower jaw-bone. The early symptoms are, acute pain, followed by a hard elastic swelling, after which the pain becomes more dull, and eventually fluctuating.

**Treatment.**—The first thing to do—except when a part or kind it is so situated as to require amputation or forbid any attempt to cure—is to make an opening into the center of the diseased mass, so as to allow the free escape of purulent matter and loose pieces of bone; the bony part is then to be kept well covered with wet compresses, and, when practicable, the cold stream or pouring-bath should be frequently applied; the cavity should be washed out once or twice a day with tepid water; and, if there are fungous growths appearing, a solution of the mild caustic should be applied daily, filling the cavity, after each application, with plasters of bor.

**CARRUNCLE—APRORRHOË.**—This affection is sometimes called a *na-fugue boil*. It commences with a hard, red swelling, attended with a

lasting, smarting pain, followed by venousness; the abscesses appear in the form of several fistulous openings, from which a thin serous fluid issues, exuding the adjacent surface. The disease always indicates a very debased or debilitated state of constitution, and rarely occurs in any but aged persons. It is generally located in some part of the back or on some portion of the head.

**Tympanic.**—The best treatment in the most malignant forms is, without doubt, the extirpation plan recommended for the preceding disease. There is much less pain attending the application of caustic in carcinoma than in carcinoma or malignant fungous tumors. And the less violent ones, wherein the pain is moderate and the progressive tendency slight, may be cured by thorough packing, a rigid diet, and rest and seclusion.

**Lepus.**—**MILKING-TANGERS.**—Lepus usually means "the wolf," and milkers-tangers, "don't touch me"—terms expressive of the rapacity and obnoxious nature of this excrescence. It is a malignant disease, usually about the nose and mouth, commencing as a small tumor, and progressing to a bad ulcer. Its first appearances are tumid, as a small dark sore, tubercle or vesicle, or a large, prominent wart. The lepus then is known by a purple margin and depressed center, which exudes a fetid, bloody pus, or an ichorous matter; the exposed surface has a fiery red appearance, and the pain is of a pricking or stinging kind. When extending into the eye, it will, if not arrested, destroy that organ, and may extend to the brain. The general health is not usually much affected.

**Treatment.**—In the early stage, when the disease appears in the shape of watery excrescences or tubercles, the bath or caustic may be employed indifferently. When it commences as a superficial red, stinging sore, the mild caustic will be sufficient. When it has extended over a large surface, or penetrated deeply, the strong caustic must be freely applied.

**Aneurism.**—An aneurismal tumor, in its strictest sense, is a preternatural dilation of the coats of an artery, forming a pulsating swelling, which eventually ruptures and destroys the patient by hemorrhage. The term is also applied to enlargements of the cavities of the heart. In the first instance the coats of the artery form the pouch or sac of the tumor; when the sac or covering is formed of effused lymph, into which the blood has escaped from the artery, it is called false aneurism; sometimes the blood is poured into the cellular membrane, constituting the diffused aneurism; and when the effused blood, in conse-

quency of a rupture of the internal and middle coats of an artery, makes itself a channel between them, and the outer coat; it is called *dissecting aneurism*. *Aneurismal cyst*—*varicose aneurism*—is a dilatation of a vein in consequence of a gush of blood from a neighbouring artery, and is generally produced by a *hemorrhoid*. *Nævus* is a dilatation of the small arteries, producing a red, shining spot on the skin; when these vessels are larger, the affection is called *aneurism by aneurism*.

*Diagnosis*.—*Aneurism*, when *external*, is known by a pulsating tumor, which beats sympathetically with the artery where it occurs; it may be diminished or emptied of its contents by pressing on the affected artery above the tumor. *Internal aneurisms*, which occur in the heart or large vessels of the chest and abdomen, are extremely difficult to distinguish. Aneurisms of the heart are divided into *active* and *passive*; the former is really a *hypertrophy* or thickening of the parietes of the organ, by which its cavities are diminished; the latter is the true *aneurismal aneurism*, attended with an enlargement of its cavity. The symptoms in all these cases are exceedingly obscure and variable, and new creation to *neuritis* and *dyspeptic aneurism*, as well as the result of various tumors and vascular enlargements not connected with any structural lesion of the circulating system. The most prominent, however, and, as a strong and constant beating or pulsatory tumor above or below the sternum, when the hands are not compressed; a full, heaving, heaving, or heaving sensation about the spine; and a double beating, or some other peculiarly irregular character of the pulse in the wrist.

*Special Causes*.—Injuries, blows, falls, violent exertions, mental excitements, and above all, abstracting, circumscribed, and grossy food, which thickens the blood and increases the labor of the heart and arteries in propelling it.

*Treatment*.—In the early stage of aneurismal tumors, compression, when it can be managed by an experienced operator, is the best remedial measure. In other states and circumstances, the ligature is necessary. The most approved operation is that of tying the artery with a single ligature above the tumor. After descending down to the vessel affected, the distal end of an aneurismal sac, &c., &c., should be mark-

FIGURE





ed around the vessel is separate it from any accompanying vein or artery; this may be done by pinning rather than cutting, to avoid wounding the the nerve or vein. The ligature is improper in false aneurism of large extent, after the pulsation has ceased in the tumor, and when cancer or gangrene exists in the vicinity of the tumor. After the obliteration of the cavity of the diseased vessel, the anastomosing vessels in its vicinity will enlarge to maintain the necessary circulation.

In varicose aneurism the vessel must be tied both above and below the injury; this double ligature is necessary even in locations where there are numerous anastomosing branches, as on the dorsal surface of the hand and foot.

The constitutional treatment is of first importance in all cases of organic diseases of the blood-vessels.

The diet must be simple, bland, and opening; all violent exertion of body or mind strictly avoided, and all bathing appliances must be mild and gentle, so as to prevent any shock to the circulation.

**Varix.**—*Varices* or *varicose veins* are tortuous, knotty, elongated thickenings and dilations of the coats of these vessels. Varicose enlargements are most frequently found in the lower extremities, the great saphenous vein and its branches being the affected vessels; the spermatic and hemorrhoidal veins are also very liable to become varicose. In many cases the valves of the veins are destroyed; the affected vessels are liable to inflammation; and the lower limb is particularly disposed to ulceration, which bleeds easily and heals with great difficulty. Varicose ulcers have existed twenty and thirty years, rendering the limb almost useless.

**Treatment.**—Compression with the reverse bandage or roller, when skillfully managed, will often cure tumors of the lower extremities. Surgeons have experimented largely in several processes—caustic or incisive, excipitation, ligature, and interposition—but with very poor success in all. A plan for obliterating the vessels by the combined action of caustic and compression has been successful in many cases. It consists in the application of caustic to one or two very small portions of the dilated veins at a time, so as to produce ulceration and ultimate adhesion, the part being, meanwhile, dressed with adhesive plaster or the acid roller. As soon as one dilatation or knob is obliterated, the caustic may be applied to another, and so on. I regard the practice as perfectly safe provided due attention is paid to bathing and dressing.

**Warty Swelling.**—**Hemorrhoids.**—This formidable disease com-

usually affects the knee-joint. Authors make two varieties, *traumatic* and *rheumatic*, as it appears in persons predisposed to, or afflicted with, either of those complaints.

**Symptoms.**—The swelling comes on very slowly, and is attended with little pain at first. Gradually the pain increases till it becomes intense, especially at night. The skin appears white, then natural, becomes tense, shining, and marked with varicose veins, and there is a constant sensation of heat to the touch. In this condition it may remain for years, but usually the swelling continues to increase until the soft parts become so hard as to appear like enlarged honey. As it progresses the limb is thrown backward, the condyles of the femur project forward, the whole limb becomes ankylosed, taking place while the joint is flexed, and matter collects, and is discharged at various sinuous openings. Numerous cases of the bone often rupture, with hectic fever, most terminating in death.

**Special Causes.**—Repeated eruptions, local injury, increased and unusual exertions, syphilitic taint.

**Treatment.**—This is one of the maladies which the popular "healing art" does not pretend to heal. When the joint is very painful, it should be bathed in warm water or fomented until this is relieved, and then dressed with several folds of wet cloth, except when the inflammation is acute, in which event cold applications are most appropriate, the rule being, as in all similar cases, to regard the sensation of the affected part. The cold pouring-baths, shower, or leg-baths or even moderate congelation, may be employed with advantage when the mobility of the part is such that they can be administered without pain. Indeed, in most cases they will wash and oil have a soothing and sedative influence. Collapsing edges of the ulcerated surface, sinuses, and fungous growths, will require the application of the mild or strong caustic. The limb should be kept as extended as possible, and as much compression employed during the suppurative stage as can be borne without pain. To these local measures must be added thorough constitutional treatment, in which the purgative should be the leading process. The regimen must be such as has been heretofore recommended for scrofula.

**HYPERTROPHIC ACHILIA.**—This is usually regarded as a result of rheumatic disease, and hence called rheumatic white swelling. It consists in a distention of the synovial membrane and capsular ligament by serum effusion, which renders the limb loose and stiff though not very painful except from exercise. Sometimes the effusion extends along the tendons of the muscles. The warm or cold shower, wet bandages,

the pink-shirt, regular water-bathing, and frequent injections to keep the bowels entirely free, are the powerful measures.

**VARICOCELE—CIRCOCCELE—SPERMATOCCELE.**—A varicose dilatation of the veins of the scrotum and spermatic cord, is called indifferently by these terms. When the spermatic veins are affected, the tumor is soft, knotty, doughy, unyielding, and compressible, increasing from below upward. The disease requires no special attention, save a careful regard to hygienic habits; occasional sitz-baths, or the ascending douche, with the use of a suspensory bandage.

**HEMATOCCELE.**—This is an extravasation of blood in the tissues vaginalis, or an effusion into the cellular membrane of the scrotum. The external parts are often thick and dark, somewhat resembling gangrene. The treatment is the same as for the preceding affection. Sometimes the disease is produced by the wounding of some large vessel, in which case the scrotum may be laid open and the vessel tied.

**HAEMOCCELE.**—This term is variously applied to a scirrhus or cancerous, varicoid, or fibrous tumor of the testis, and to a simple enlargement as a consequence of untreated chronic inflammation. When the tumor is malignant, castration is the only sure remedy; otherwise it may be relieved by the remedies recommended for the preceding diseases.

**HERNIA HEMORRHOID.**—This tumor is applied to a swelled testicle from chronic inflammation, or to a hardened tumor which is at first confined to the epididymis, the pain extending along the cord to the hip. The latter variety is frequently the result of a suddenly-suppressed gonorrheal discharge. The former variety requires cold, and the latter warm-water-treatment at first, to be followed by cold, and finally cold applications.

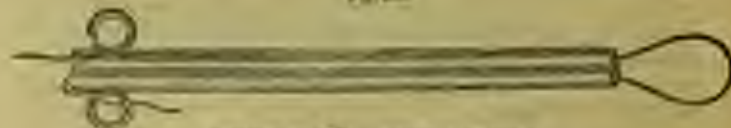
**CYSTIC SARCOMA.**—This is a hydatid disease of the testis. It occurs chiefly in middle life, and is sometimes mistaken for hydrocele; but the real shape of the tumor will readily distinguish it from that affection which is pyriform. The morbid mass consists in part of a solid structure, and partly of cysts of various sizes, containing a thin, transparent, yellow serum, or a turbid fluid. The complaint had better be managed on the "let alone" system, unless its bulk or malignancy creates great inconvenience or suffering, in which case extirpation is the only remedy.

**POLYPUS.**—The most common situation for polypus is near the neck and vagina, although they may grow from any internal mucous surface. For all practical purposes, it is sufficient to distinguish these into soft and hard, although various writers have made several subdivisions of each, as verrucous, vesicular, fibrous, fleshy, cartilag., or cancerous, &c. The latter variety is probably a true cancer, instead of a concreted polypus.

**Treatment.**—In addition to what has been heretofore said in relation to the treatment of these morbid growths, it may be remarked, that the application of powdered caustic—either mild or strong, according to the firmness of the tumor—will frequently be sufficient to destroy them. In many cases the caustic may be advantageously combined with mechanical force, as squeezing, twisting, crushing, &c., leaving every such part as may be conveniently detached. The powder should be applied with a camel's-hair pencil. This plan is particularly adapted to *hard* polypi. The practitioner should also bear in mind that *hard* polypi are very liable to grow again, after having been removed by mechanical means, unless the surface from which they are detached is thoroughly cauterized.

Polypus in the vagina, whether originating from its sides or from the mucous surface of the uterus, usually present a pedunculated shape, which is favorable to the operation of removal by ligature. I have known cases connected with such a degree of pedunculation as to allow the application of a ligature without any instrumental assistance; but generally the ligature will have to be introduced by means of the polypus forceps, or the double cavity, fig. 200, after which it is to be drawn

FIG. 200.



DOUBLE CAVITY, WITH LIGATURE.

tight enough to cut off the circulation and strangle the tumor; the cavity is to remain, and the ligature tightened from time to time, until the tumor comes away, which will usually be in five or six days. When the neck of the polypus cannot be reached by ligature, the tumor may be destroyed by a solution of the caustic potash, introduced through a silver catheter; or the powdered caustic may be applied by means of pieces of fine sponge, with threads attached to withdraw them.



**Nodules.**—A majority of these tumors are included under the term *exostosis*, and the term *nodule* is usually restricted to hard excrescences or incrustations which form around rheumatic and gouty joints. It is employed, however, by several writers, synonymously with *exostosis*; and many authors apply it to tumors of the cylindrical bones resulting from the removal of the joint. It is the opinion of some surgical authors that *epiphletic nodules* only occur in persons who have taken mercury, which, by the way, has effected only more mischief on the human constitution than has the disease it is intended to cure.

Sutton's Cancer says (*Cancer's Surgery*). "I believe that true nodules are rarely produced in epiphysis, unless the patient has been using mercury." Dr. HENRIER, who had an extensive experience in the treatment of epiphletic diseases, affirmed that he had never seen but two cases of nodules in patients who had not taken mercury; and in relation to these two cases the question may be fairly raised, Whether the patients had not taken mercury on some previous occasion.

**Treatment.**—This is mainly constitutional. Thorough general bathing, an abstemious diet, and local compresses, are the leading measures. When the tumor becomes projecting and pointed, the soft parts may be laid open, and the tumor removed with a saw, chisel, or trephine; when ulceration occurs, attended with carious edges or fungous excrescences, these require amputation.

**ENLARGEMENT OF THE PROSTATE GLAND.**—In this affection the gland often attains many times its ordinary size, and is much harder than natural. It produces but slight difficulty in urination, yet it prevents the bladder from being completely evacuated, and the urine is, in consequence, retained somewhat thick. Total retention of urine, however, is liable to occur if the swelling is aggravated by any excess to which the patient is subjected. There is a sense of weight in the perineum, and the middle lobe of the gland usually projects into the bladder, altering the shape and direction of the urethra, and rendering the passage of a catheter or sound more or less difficult. The disease is usually caused by calculous concretions or venereal affections.

**Treatment.**—Frequent hip-baths, and a thorough employment of the moeding douche are the ordinary local applications; to which must be added some general daily bath, as the tripping-diet, or pack and self-bath. When it is produced by retentive or exuberant drying up a gonorrhoeal discharge, warm hip and foot-baths must be continuously employed until the discharge ceases or the irritation subsides; after which the cold treatment may be employed as above.

## CHAPTER V

## ULCERS.

ULCERS are persistent solutions of the continuity of the natural texture. In a general sense, they are distinguished into the healthy, or healthy, and the malignant, the indolent, and the venereal, etc. They are also subdivided into many varieties, according to their causes, nature, tendencies, consequences, etc., as simple, venereal, fatal, fungous, gangrenous, cancerous, scorbutic, syphilitic, scurfy, inevitable, phagedenic, violent, scalded, squamous, carious, varicose, etc. Many tumors, if not removed in their early stage, become ulcers, as cancer, carbuncle, etc.

An ulcer is called healthy when its persistent matter is a normal secretion, unattended with the destruction of the surrounding parts. Its surface is florid; its granulations are solid and of uniform size; it is without offensive smell; and it heals regularly, leaving little or no scar. A common boil is an example.

An inevitable ulcer is very tender to the touch; extremely liable to bleed; its discharge is slight, and of a thin, bloody, or sanguine appearance; its color is dark or purplish; its granulations are imperfect and spongy; its edges are ragged and eroded; the parts around are red, swollen, and often indurated.

The indolent ulcer is the more frequent form of "running sore" we meet with; its edges are inverted, rounded, thick, glossy, and regular; the granulations are of a dull pale aspect, and insensible; the pus is thick, of a dark yellow color, and adheres to the bottom of the ulcer. It is most frequently located on the lower extremities.

Venereal ulcers may be either indolent or malignant; they are connected with enlargements or varicosities of the adjacent veins. They are generally situate below the knee.

Fatal ulcers are venereal parasites, having a narrow outlet, the disease being kept up by an altered texture of the part.

Specific ulcers result from the inflammation of specific diseases, as scurvy, syphilis, erysipelas, etc. Other distinctions, depending on many varying appearances, or on common causes and terminations, are of no practical importance.

is always of primary importance in chronic ulcers of every kind. In all matters of regimen the patient must be held to a strict accountability to physiological law. The whole skin must have, at least, one thoroughly daily ablution or packing. The local medication will vary according to the character of the ulcer. The trophic ulcers need nothing more than a cool wet cloth. When the irritable ulcer is very painful, the limb or surrounding part may be dressed with warm cloths until it becomes easy, and then "dressed up" with the ordinary "water-dressing." When exposure to the air aggravates the pain, the surface may be covered with flour. The indolent ulcer alone requires the application of the rail means to remove fungus growth or callous edges. When the surrounding parts are hard, they should be continuously firmness; and if the sore is on the lower extremity, compression with the roller or by adhesive straps is useful. *Fungous* ulcers require still stronger compression; the roller bandage should be applied to the whole limb, and the sore treated in other respects according to its character. When the veins are extremely distended and knotty, adhesive straps may be alternately applied over and adjacent to the ulcer; and these may be covered by the roller. Compression of such distended vein with poultice fens, one or two inches distant from the ulcer, so as to obliterate their outlets by adhesive inflammation, may be resorted to in bad cases with safety, and usually with success. *Fistulous* ulcers generally require to be opened with the ligature, or obliterated by caustic.

**FURUNCLES.**—A boil, or life, as some authorities have it, is a small pile of granules, ended in the dermoid tissue, and leading to a pointed tumor which sooner or later breaks and discharges a white or yellowish pus, mixed with blood. Sometimes a small *thrombus* mass of dead but unabsorbed areolar tissue appears, after it separates, called the core. The only medication demanded is the wet dressing; and, should the tumor not open spontaneously when matter has evidently formed, it should be punctured with a lancet and the matter pressed out.

**PARULI.**—The common gill-tail is a small ulcer which frequently forms in the gums. It is sometimes owing to canines teeth, but is generally produced by bad dietetic habits. Those who eat *raw* vegetable food, and use the tooth-brush daily, are seldom troubled with such affections.

**PEYER SORES.**—The most common form of chronic ulcers are known as "*After sores*," "*brandy sores*," "*ulcers*," etc., and some-

times, in view of their usual locality, *"old sore legs."* They are generally connected with and the result of intemperate habits. I have known several bad cases among the children of liquor-drinking parents. The ulcers are deep, the flow is copious, or some times scanty or hard as lead, and frequently purple or dark. The character of the sore may be venereal, or syphilitic, or of a mixed character, some persons being inclined and others indolent.

**Treatment.**—These cases require a long course of treatment, but can generally be cured, provided the patient will sign and then keep the temperance pledge. When painful they are to be washed with warm water or the warm fomentation; when hot and inflammatory, the cold douche should be applied to the whole limb daily. Callous or fungous excrescences are to be destroyed by caustic. The roller bandage is also an indispensable part of the treatment. It must be applied twice a day—every morning and evening is a good rule—and thoroughly wetted with cold water after it is applied; wet cloths should always be placed over the bandage when there is the least preternatural heat or active inflammatory excitement. All these measures, however, will fail, unless the whole surface is thoroughly stretched so in the way of bathing; and the stomach and bowels are kept unobscured and well cleansed by the appropriate quantity and quality of food.

It is a prevailing opinion among drug-physicians, and a popular prejudice with the people, that it is dangerous to cure old sores. Truth, "they say," lies between two extremes. The truth in this case, as in all others, is at one extremity. It is *always* dangerous to heal them drug-spastically, but *never* dangerous to cure hydropathically.

**Caries and Necrosis.**—These terms are often employed synonymously; but in strict surgical parlance, caries is an ulceration of the bony structure, analogous to gangrene of the soft parts; while necrosis is the death of the bone, analogous to mortification. Caries usually attacks the spongy bone, as the vertebrae; and necrosis or generally affects the long or flat bones, as the tibia, humerus, and bones of the cranium. Necrosis in the leg or arm is generally called "*fever sore.*" The process by which dead portions of bone separate from the living—is analogous to sloughing of the soft parts—is called *exfoliation*.

**Symptoms.**—The bone, though invisible in their healthy state, become exceedingly painful when diseased. The swelling had no regular spot or point, but is more distressing than ordinary inflammatory swellings, especially at night. The part is hot, somewhat firm, and sometimes covered as suddenly and progresses rapidly in suppuration.



The pus is dark, viscid, and fetid, and generally discharged through several fistulous openings or pipes; and through these the rough, uneven surface of the bone can be felt by means of the finger or crooked probe. Sometimes the bones of the cranium are perforated at numerous points, constituting the term *cribrum osis* of authors. There is much or less fever, which is of the hectic character. When necrosis occurs in the tibia or shaft of the long bones, it seldom or never extends to their articular extremities; but the exterior layers form a rind around the dead portion, which is called *sequestrum*; and between these ossified layers and the sequestrum suppuration takes place.

*Special Causes*.—Professor Parker disposes of the causes of necrosis in the following summary manner:—"So far as any thing can be known, it seems to be the result of sudden changes of temperature;" but the fact that both cancer and necrosis frequently follow local injuries, as blows and falls, and are also frequently connected with constitutional taints, as scurvy, scurvy, syphilis, mercurialisation, etc., seems to indicate that something should be known beyond mere temperature. The greatest mistake, as well as the most malignant bias of cancer and necrosis owe their existence to the combined action of mercury and syphilis, or mercury and scurvy; or, in the language of Samuel Cooper, "to the prejudicial influence of a badly conducted course of mercury."

*Treatment*.—In its forming stage the disease can generally be "disseminated" by douching the part frequently with cold water, the constant application of wet cloths, and one or two packs daily. The late Professor Nathan Smith recommended making a free incision down upon the bone, and even into its substance, if relief from pain did not follow the first incision, on the plan of treating a felon or whitlow; and no doubt such a position is a very early stage, would lessen the extent of the inflammation; still if the cold-water measures are vigorously employed it will be unnecessary. After ulceration has taken place, "the books" furnish us with any number of vinegar-and-rind, arsenic-and-oil, bread-and-milk, soap-and-molasses, rati-and-sugar, scraped-powder, tobacco, stramonium, etc., poultices, to help "digest" the ulcer; but I know of nothing in theory or in experience which gives them any advantage over a few folds of old linen rags well wetted in pure soft water, provided the temperature is duly regulated.

But when the disease proceeds to suppuration and exfoliation, it is important to get rid of the purulent matter and dead bone as fast as possible, yet all rough handling of the diseased part must be avoided. If any portion of bone becomes loose or projecting, it can be mortified to be dead—in which case its value will be rather as debris than

removal—the caustic should be applied to it. “The mild caustic,” says Dr. Hal, “has a powerful effect on diseased bone, and seems to exert a stronger influence than the bi-carbonate, or even the persulphate—caustic potash—without any injury to healthy parts.” When there are several openings they should be constructed into a single shew if possible; for which purpose the caustic, knife, or ligature may be employed according to circumstances. Dead bone and fungus growth may be dissolved by passing tonic charged with the sesqui-carbonate of potash, into the sinuses, and pushing them against the morbid structure. Sometimes new bone is formed around the dead part, inclosing it in a shell, and producing a preternatural enlargement of the part; an opening, however, is usually left in the new formation, through which purulent matter issues. This opening must be enlarged by caustic sufficiently to allow of small tests or caustic solutions to be passed through a tube or syringe to the dead bone, to effect its dissolution. After every remnant of disorganized matter has been removed from the ulcerated cavity the ulcer will heal kindly; yet the bone will generally remain preternaturally enlarged.

**FISTULA IN ANO.**—Any abscess about the rectum, opening either within or without the anus, or both, is known by the term, *fistula* is *ano*. Fistulae are so common in this situation, that some physicians, whose practice “soon being general is confined to a particular branch of their profession,” have selected “*diseases about the anus*” as the particular field which is to engage their “*professional attention*.” *Fistulae in ano* are usually connected with piles, and both have habitual connections as their common cause, although the former is sometimes occasioned by wounds and injuries.

When there is an open communication between the rectum and the cutaneous surface, the fistula is called *complete*; and *incomplete* or *blind* when it communicates with but one; the latter is called *blind internal* or *blind external fistula*, as it opens into the bowel, or upon the external skin. In a majority of cases the fistulous pipe, or sinus, is tortuous and branching, several distinct openings being laterally connected. The sinus is lined with a semi-cartilaginous, or callosous growth, having the covering property of mucous membrane, from which exudes a thin, yellowish pus; this ulcerated surface is generally extremely tender to the touch.

**Prognosis.**—The “standard authors” on surgery are rarely not well posted in the matter of curing the disease under consideration. Their plan of laying the ulcer open with the knife is always hazardous, generally unsuccessful and sometimes fatal. More than twenty years

ago a self-constituted reform school of medicine in the city of New York, published to the world (*Dr. Beach's American Practice of Medicine*) a successful method of treatment; yet we do not find the regular professors adopting or commending it, perhaps on account of its irregular origin. The main features of this method consisted in substituting the ligature and the caustic for the knife and the scarificator.

The first process is to subdue the inflammation and overcome the irritable condition of the ulcer, for which purpose frequent warm hip-baths, with the wet compresses, must be employed; after which the exact site of the cavity may be ascertained by the probe. The complete fistula may be ligated by passing the threaded probe from the external to the internal orifice, the string being brought down by the finger introduced into the rectum. The ligature is to be tied as firmly as the patient can well bear, and tightened a little daily. Dr. Hill's method—the best exact—of tightening the ligature is, before tying, to let the ends of the string pass through a large oval cork, supporting three fourths of an inch where they emerge, and passing over a little wooden roller, fixed to radial grooves cut on the end of the cork, fig. 201. These notches will hold the cork, after turning or twisting to tighten the string.

While the process of ligation is going on, the caustic powder must be inserted by means of pledgets of lint to act upon and destroy the callosities or cartilaginous growths. If several sinuses exist they must all be managed in the same way, and every callosity must be thoroughly counteracted. The part should be frequently bathed or fomented with warm water when painful, and several folds of wet cloth, covered with dry, kept constantly applied, being retained in place by a T bandage.

When branching sinuses lead into or from the main one, they should be enlarged, and all the callosity along their course destroyed by the armed test. A blind internal fistula should be opened with a pointed probe or the caustic, at the point nearest to the external surface, thus converting it into a complete fistula to be treated as above. The blind external fistula can often be cured by the armed test alone; but if this fail, the threaded probe can be passed through the bottom of the sinus into the rectum, and the ligature applied.

It will usually take several weeks' time to cure bad cases of this affection; and during the whole course of treatment the patient's diet should be extremely simple, the bowels kept entirely free by injections.



FISTULA LIGATION.

and he should keep very quiet, resting much of the time in the horizontal position.

**FISTULA IN PERINEO.**—A sinuous ulceration in the perineum is generally the result of a stricture in the urethra; the tumor, thus constituted, acting upon the lax structures of the part, after numerous extensive ulcerations, attended with very offensive discharges of purulent or sanious matter.

**Treatment.**—After the stricture has been removed, or the urethra dilated, as the case may be, a *gutta serena* catheter should be introduced into the bladder, and worn constantly; the hard, callosous edges of the ulcer are then to be disengaged by the repeated application of the mild caustic, or the pure potash, if necessary. Before applying the caustic, the parts should be washed with warm decoctions; and if the urethra is too irritable for the constant employment of the catheter, the patient should keep on his back while it is withdrawn, taking care to have the instrument introduced before he rises, so that the bladder may be emptied without allowing any urine to come in contact with the ulcerated parts.

**STRUCTURES AND FUNCTIONS.**—Strictures and fissures of the urethra and rectum, though not in any sense ulcers, are so intimately connected with these that they may as well be considered in this place. The membranous portion of the urethra, between the bulb and the prostatic gland, is most frequently strictured, although a stricture may occur at any part of its extent. The disease may be *spasmodic* or *organic*. In the former case obstruction is temporary, and is produced by a partial or total contraction of the canal in consequence of its sides being pressed together by the contraction of the surrounding muscular fibres. In the latter form the obstruction is permanent, and results from a morbid thickening of the mucous membrane. A partial organic stricture may become total by spasmodic action, superadded to the structural difficulty. The most frequent cause of stricture is gonorrhoea, or rather, the irritating drugs which are employed to cure it. Injuries from the passage of stone or gravel, and by surgical instruments, sometimes produce it.

**Symptoms.**—The spasmodic stricture is known by the sudden stoppage of the stream after it has reached the irritable spot; there is also a desire to urinate frequently and hurriedly. In the organic stricture the stream becomes cracked, gradually diminished, and at length divides, and finally passes only in drops. The excretion eventually becomes yellow and purulent, staining alteration in the urethra as high



der. The constant habit of straining often induces hernia or piles; and when extensive sloughing has taken place, rigors and hectic fever are the precursors of a fatal termination.

Treatment.—The first measure is to relieve the bladder. When the stagnation occasions a tense, round, painful distension above the pubes, the catheter must be employed; the gonorrhoeal inflammation or irritation, when it exists, may be subdued by frequent warm hip-baths, followed by tepid, then cold, and finally cold; the brush must be kept on by a simple opening diet, with tepid injections when necessary; and cool water should be drunk as copiously as the stomach can comfortably bear. With the subsidence of the acutest irritation, the spasmodic action will usually disappear; but if not, the additional measures are necessary, which pertain particularly to the treatment of permanent stricture. These consist in dilating the urethra by means of gum elastic or gum percha bougies, or destroying the stricture, which is usually confined to a very small space, by the application of nitrate, or both. The dilating process is managed by introducing a very small bougie at first, and after it has been worn so much of the time as possible for a day or two, a larger one, and so on, until the constricted cylinder is enlarged as much as possible. If sufficient relief is not obtained by dilatation, the caustic is the dernier resort. This is applied by means of a bougie armed with nitric, nitrate, or titate of silver, and passed to the strictured point against which the caustic is pressed for about one minute at a time. If there are several strictures, each must be cauterized successively. Another method, called *incision*, which consists in introducing a bougie through the strictured portion, and retaining it as long as possible, during which time pressure is made against the stricture by an external compress and bandage, to excite absorption, has been frequently successful. During all or any of these operations, the irritation must be kept down and constant relaxation of the parts maintained by very frequent warm hip-baths or fomentations. Indeed, a majority of cases will yield to the medical part of the hydragogue treatment, without any resort to mechanical surgery whatever; and the cases are extremely rare which will require any mechanical operation except the dilating process, provided all the patient's habits and management are thoroughly hydropathic. It should be generally known that, as a majority of strictures, of both the spasmodic and permanent kind, are produced by irritating and exciting applications employed to check gonorrhoeal or gleet discharges, so a majority will get well by regulating the discharges; and this may generally be done by the persevering employment of warm local baths and fomentations.

*Stricture of the rectum* is a thickening and hardening of the intestine, resulting from condensation; it produces a serious difficulty in passing the feces, which are excreted in small, constricted, elongated, or flattened lumps, or in a few streams. As in the case of fistula, all calomel evacuations must be resorted to by caustic, and the constricted intestine must be mechanically dilated. A piece of ordinary wood, covered with oiled silk, of a conical shape, about three inches in length, the smaller end just large enough to pass the stricture, and the other, about two inches in diameter, answers every purpose. It can be held by a T bandage, made of gutta-serena, and worn as long, and as frequently advanced as the patient can well bear; the rectum should be well cleaned with a tepid injection previous to each application of the dilator.

*Fistula of the anus* are ulcers or grooves in the rectum, extending upward from the orifice. The edges of the crack or fissure become thickened and hardened, and constantly exude a purulent fluid. These should be removed by caustic, as in the case of fistula; the patient kept quiet, the warm reboiled bath employed, and the general regimen strictly attended to.

**SALIVARY FISTULA.**—Wounds of the face, which sever some one of the secretory ducts of the salivary glands, are often followed by an obstruction of the cavity of the duct, and the formation of a fistulous opening through which the saliva escapes upon the outside of the face. The difficulty may be remedied by making an opening with a small trepan, passed into the open end of the duct or the fistulous opening, and then inserting a gold or silver tube to guide the saliva into the mouth; after which the fistula may be healed by adhesive straps, or those aided by the mild caustic. When the injured parts are entirely healed, the needle or tube may be removed.

**FISTULA LACRYMALIS.**—In the true lachrymal fistula the lachrymal sac is distended to a tumor at the inner corner of the eye, which ulcerates and forms an opening through which the tears are discharged on the face, instead of passing to the nose. There is also a morbid secretion of the sac distinct from the tears, for which the gold cautery may be necessary; and the nasal duct may be so obstructed as to require probing, and the application of a tent.

## CHAPTER VI.

## ABSCESS.

*AN ABSCESS*—*empyema*—*empyema*—is a collection of purulent matter in a cavity, or in the substance of an organ or part of the body. Sometimes the pus is contained in an cellular cavity lined by a cyst, and sometimes it is infiltrated into the meshes of the areolar tissue. The formation of an abscess is often preceded by chill, or shivering fits, called *rigors*; and just before suppuration takes place, the pain, tension, swelling, throbbing, &c., are increased. After matter is formed, a sensation of weight and throbbing continues in the part, and a conical projection soon denotes the pointing of the abscess, preparatory to its bursting and discharging its contents. Some abscesses will point in a week; others may not do so in several months. Generally a fluctuation may be felt in the swelling previously to its pointing. In order to distinguish the fluctuation of an abscess to the best advantage, two or three fingers should be placed on one side of the swelling, and the opposite side briskly tapped with the fingers of the other hand.

Deep-seated abscesses, and those formed beneath fascia and dense fibrous tissues, do not readily point, but they are attended with greater constitutional disturbance; and severer local symptoms, as shiverings, night-sweats, &c. A sense of weight and swelling in the part will also exceed the acutely throbbing pain; and not infrequently the temperature over the abscess will become subnormal.

The general treatment of abscesses is precisely the same as that of inflammatory tumours and thorns, preceding the formation of matter; after which, as a general rule, they are to be opened by cutting or cauterization—usually the former.

*Empyema*.—This is a collection of matter in the cavity of the pleura. Inflammations of the lungs or of their membranes occasionally result in suppuration, producing the abscess under consideration. It is known by a manifest enlargement of the side affected; a dry, tickling cough; laborious breathing, which is easiest in the erect posture; fixed pain in the chest, with difficulty of lying on the same side.

*Treatment*.—In a few cases the matter has worked its way into the bronchial tubes and been expectorated, followed by recovery.

When any thing is done surgically, it is the operation of *parotidotomy*. An incision is made with the scissars an inch and a half in length, through the integuments, usually at the upper edge, and a little behind the middle of the duct rib; the incised muscles are carefully separated, and the point of the instrument passed to through the pleura muscle; a canula is then introduced, through which the salivary corpus. Care must be taken that air does not pass in through the tube; to prevent which, the patient may suck, after the introduction of the canula, on the affected side; or a saline gargle may be used. This operation has not been generally successful.

**MAXILLARY ABSCESS.**—This disease is an inflammation, and collection of matter in the interior of the upper maxillary bone. It is generally produced by the irritation of decaying teeth, and may exist for years, passing for toothache. It may be known by smart and dull, not pain in the face just below the prominence of the nose bone; the face is also extremely offensive to the patient, and to others about him. Sometimes there is a considerable discharge of offensive matter from the nose, and in some cases the face is much swelled and disfigured.

**Treatment.**—The inflammation and irritation should be allayed by derivative baths and local fomentations. The surgery proper in the case consists in extracting the second or third molar tooth, or both; and if the pus does not find a ready exit, a hole is to be drilled through the alveolus into the interior about the size of a goose-quill; the cavity should then be repeatedly washed by injecting warm water; and if the fever does not soon subside, a few applications of the cold issue, or leeches, should be made.

**MAMMARY ABSCESS.**—Abscess in the breast is sometimes the result of injuries, as blows, pressure, &c.; but generally it is the consequence of bad management or bad treatment during the periods of gestation, child-birth, and lactation. The disease usually appears in four or five weeks after parturition; is about ten days thereafter suppuration takes place, beginning in several distinct parts, and forming many separate abscesses, all of which, however, communicate. It opens at one or several points.

**Treatment.**—This distressing affection is a standing danger to the mother, the more, the patient, and all parties concerned. It is produced by the most foolish stuffing, and stopping, and stimulating and heating, and dressing; nor is the usual method of discharging the disease, after it has been artificially produced, half as well calculated to cure the



likely as to kill the patient. If promptly and properly treated, it can almost always be speedily resolved in its early stages. The constitutional treatment is more important than the local, and both should be managed on the plan heretofore recommended for visceral inflammation. The wet-sheet pack, or frequent tepid ablutions, with hip and foot-baths, are the general measures; and the constant application of several folds of wet linen, very frequently renewed, and well covered, is the local application. Water may be drunk freely, but the diet should be rather dry.

**OSYX.**—A collection of purulent matter between the laminae of the cornea, having the shape of a nail, is so called in surgical technology. Its form, however, is nearly oval, like the white mark at the root of one of the finger-nails. It usually occupies the lower edge of the cornea, and may be distinguished from hypopyon by its form and situation remaining unchanged in all positions of the patient's head. This affection can generally be removed by the appropriate remedies to reduce inflammation—at which its existence depends—and promote absorption. The head and eye-baths, a moderate diet, and derivative, hip, and foot-baths, are all serviceable.

**LUMBAR ABSCESS.—PAIN IN ANTERIOR.**—This is one of the most formidable and fatal of abscesses. It commences with a dull, heavy aching in the lumbar region; pain shooting down the spine and thighs, and a lameness in one or both lower limbs, with a difficulty of standing erect; there is usually a drawing up of the testicle of the side more particularly affected; the patient is easily fatigued by exercise, and when lying down is disposed to flex the thighs or the abdomen. At length the local pain becomes throbbing, chills and night-sweats occur, a fluctuating enlargement appears along the psoas muscle, and the apex of the tumor presents itself immediately below the groin. The disease usually occurs in scrofulous persons, and is often connected with caries of the spine, in which case curvature of the spine and paralysis of the lower extremities are apt to result.

**Treatment.**—If detected in the early or forming stage, this disease requires thorough constitutional treatment, of which the purgative daily is the leading process. The diet must be strict, the bowels kept open by laxatives, and wet cloths constantly applied to the painful part. If the treatment is not commenced early enough to prevent suppuration, the abscess, as soon as fluctuation is clearly detected, should be punctured to let out the matter. When the pus has very deep, an opening may be made to it with elastic probes. After the abscess is

speed, moderate compression should be kept up, and the water-dress reg. continued.

**Note.**—Sometimes the swelling of a lumbar abscess in the bend of the groin is easily mistaken that of a hernial protrusion, but great difficulty is experienced in the diagnosis; and the difficulty is increased by the fact that the same impulse is communicated to the swelling when the patient coughs in either case. Usually, however, the swelling in lumbar abscess is larger and more toward the flank. In cases of extreme doubt, a needle may be introduced into the tumor to ascertain the character of its contents.

**HER DRAINAGE—CERVICAL MASTOIDS.**—This disease, like the preceding, is seldom cured in the regular way. It consists in an abscess originating from rotas of the head of the os femoris; it generally occasions a luxation of the hip joint and a permanent shortening of the limb. The symptoms come on insidiously. Generally a slight pain in the knee is the first thing noticed. On a close examination the limb will be found elongated, which makes the knee to be slightly bent, and the whole limb more or less disfigured. At this period the pain self-relieves the groin, and may be severe. Extensive ulceration has generally taken place when purulent matter makes its appearance; this may be discharged at several points, although the abscess eventually opens in the groin. In some cases the head of the femur is not destroyed, and ankylosis results; but usually the head is destroyed upon the surface of the ilium, where it may form a new joint, and produce a deformed and shortened limb; when the head is entirely destroyed, the limb will be shortened several inches.

**Treatment.**—This does not differ essentially from that applicable to the preceding disease. When fistulous openings exist, their callous edges or jagged granules may require the caustic; and when they are connected, they should, if practicable, be converted into a single one by the ligature. In order to enable the patient, during the lengthy process of cure, to exercise in the open air, he should be supplied with crutches, and the limb should be dressed with gun-sheer, or other light splints, to keep the affected joint as motionless as possible.

**PROSTATIC ABSCESS.**—Abscess of the prostate gland is a result of acute inflammation, and may be known by rigors, with swelling, heat, and redness of the perineum externally. As soon as matter has formed, the abscess must be opened at once, but the matter work its way into the rectum or urethra.

## CHAPTER VII.

## HERNIA, OR RUPTURE.

THE terms *hernia* and *rupture* are commonly employed as synonyms; but writers who are strict in the use of language, apply the former word to all protrusions of the viscera or parts from their natural position, while the latter term is limited to abdominal protrusions. The word *rupture*, however, is always a misnomer, for it implies that something is burst or torn, which is not necessarily the case.

VARIETIES OF HERNIA.—These are innumerable. They may be taken the brain, lungs, stomach, intestines, bladder; the different portions of the peritoneum, and in rare cases, the liver, spleen, uterus, or ovaries. The parts commonly affected with hernia are the abdominal viscera; of these the intestines, or viscum, or both, are the portions usually protruded; and the abdominal ring, the navel, and a point on the inner side of the femoral vein, just below Pussart's ligament, are the places where hernia most frequently appear. They are met with externally at all points of the head *abdo*, at the *foramen ovale*, the *indistinct notch*, in the *perineum*, and in the *region*:

TECHNOLOGY OF HERNIA.—This is derived from their contents and locality. A protrusion of the brain is called *encephalocele*, or *hernia cranii*; of parts within the thorax, *pneumothorax*; of the stomach, *gastrocele*; of the intestines, *enterocele*; of the uterus, *epiplocele*; of lungs, *extero-epiplocele*; of the liver, spleen, bladder, uterus, etc., *hepatocele*, *splenocele*, *cyстоcele*, *hysterocele*, etc. Abdominal hernia are distinguished according to the aperture from which they escape. At or near the navel they are called *umbilical*—*omphalocele*, or *omphalocele*; through the *linea alba* above the umbilicus, *epigastric*; through the *linea alba* below the umbilicus, *hypogastric*, *infra-umbilical*, or *collocele*; through the abdominal ring, *inguinal*, or *infra-pubic*, and this variety, when small, is called *balanocele*, and is man, *athrocele*, or *scrotal hernia*, when the intestine has descended into the scrotum, while in women its extension to the thigh is called *epithiocele*, or *subur*, *pubic*, or *labial hernia*; through the *crural notch*, *femoral*, or *varicocele*; through the opening which gives passage to the *infra-pubic cord*, *infra-pubic*; through the *sub-ischialic notch*, *ischialic hernia*;

through the levator ani, and appearing at the perineum, *subcuticula*, or *perineum*; through the *punctum* of the *region, ulocula, elytrac*; and through the *diaphragm, diaphragm, etc.*

— *External hernia* includes all forms of abdominal protrusion, except those occurring at the umbilicus, abdominal ring, or lower stomach.

In inguinal hernia, the intestine may be stretched in the canal after having passed through the internal oblique ring, when it is called an *incomplete inguinal hernia*; when it passes through the canal and emerges at the external oblique ring, it is called *complete inguinal hernia*. Complete inguinal hernia is called *direct*, or *ventral hernia*, when the bowel passes through the space between Poupart's and Gimbernat's ligaments, leaving the external ring and spermatic cord as the outside; and in other cases it is termed *oblique*.

*Co-proctal hernia* is the protrusion of some portion of the abdominal contents into the *masa vaginalis testis*, owing to a want of adhesion between its sides after the descent of the testicle.

**PATHOLOGICAL DISTINCTIONS.**—In abdominal hernia the protruding part usually pushes along a portion of peritonium, which forms a sort of pouch, and is called the *trivial sac*; the inner part of which is the neck, and the expanded portion the *body*. The bladder and cecum, however, not being contained in the peritoneum, do not have a complete sac; and in cases of wounds and abscesses, the sac may be absent; but when it exists it is termed *hernia*, in which there is really no protrusion at all.

In complete or direct inguinal hernia, there are two sacs, one at the internal and one at the external ring.

Hernia is called *reducible* when the displaced part is attended with no disturbance of the general health, and is susceptible of being easily replaced; when incapable of replacement, from its size or from adhesions, it is called *irreducible* or *incarcerated*; and when the incarcerated part is constricted and inflamed, obstructing the passage of feces, and causing violent pain and sickness, it is called *strangulated*.

**SPECIAL CAUSES OF HERNIA.**—Surgens tell us that *drugs, falls, violent exertions, or lifting, winds, dropsy, diarrhoea, pregnancy, straining at stool, hard riding, and severe coughing*, are the common exciting causes, while general debility is the general predisposing cause. All of these causes are favorable to these excursions, and some of them produce them; but the ground and special cause is *enlargement*. Without this prolonged condition, most of the other causes named would be powerless. Many persons, perhaps a majority in re-



fixed society, scarcely ever go to sleep without being obliged to strain desperately, to resist to the "solicitation of nature." And when this straining has been kept up for years, it is not remarkable that very slight accidents should cause the "bowels to push out" of their natural inclosure in the shape of hernial protrusions. Some have estimated the subjects of hernia to be one eighth of an entire population.

**DIAGNOSIS OF HERNIA.**—In a reducible hernia the tumor may appear gradually or suddenly at some one of the points above named; its size is changeable, being larger when the patient stands, or smaller when he lies on his back; compressions will generally diminish it; it is usually more moist after a full meal, or when the patient is flatulent; when the patient coughs, or sneezes may be felt at the tumor as if air were blown into the swelling. When the sac contains intestine only, the tumor is uniformly smooth and elastic, and also painful to pressure; when it contains omentum only, the tumor is laxer, and has a more flabby, or doughy, and somewhat unequal feel; and when it contains both—*intestine-epiploids*—a part of the contents of the hernial tumor will slip up with a gurgling noise, leaving behind a portion less readily reduced.

**Irreducible herniæ** are distinguished by more or less difficulty in examining the bowels; colic pains are frequent, with a variety of dyspeptic symptoms. They do not usually become great in size or in circumference, but are liable to *intussusception*—a slipping of one portion of bowel into another—and this is a dangerous and often fatal accident.

**Strangulated hernia præsternæ**, first, an irritable swelling of the part affected, with a hot, firm skin externally, and a pain at the point of constriction; the pain generally extends to the diaphragm, followed by nausea, vomiting, obstinate constipation, rapid pulse, and general feverishness. The peristaltic action is often inverted, and fecal matters are ejected from the mouth. If reduction is not soon effected, the bowels become distended with air; the abdomen hard and tense, the extremities cold, while bloody clotted sweats, and a sinking pulse, with a sudden cessation of the pain, denote the existence of necrosis, and the approach of death.

**GENERAL TREATMENT OF HERNIA.**—When the hernia is reducible, the protruded part is to be returned to its natural position, and maintained there by a truss, or other suitable contrivance. In some rare cases, however, the contents of the hernia are so bulky, or the parts so adherent, that it is advisable merely to support the tumor with a

suspensory bandage, unless an attempt at a *refined cure* should be deemed expedient.

In inoperable cases the strictest attention must be paid to the diet, which should be so arranged as to obtain the least tendency to constipation. With this precaution, the use of a truss or bandage, and the avoidance of all rough exercises, the patient may “live through life” very comfortably.

But when the intolerable variety suddenly becomes intercurrent, and in all cases of *emiprosion*, the first attempt at relief should be by the knife, or *local operation*. The task can almost always be successfully performed by any one who has a clear idea of the mechanism of the part and the existing details.

The patient is to be placed in a horizontal posture on the sound side—these directions apply particularly to *egesimal* and *hemoral* hemia, other varieties not requiring special instructions—with the legs elevated, the chest inclined forward, the thigh of the affected side flexed upon the abdomen, and drawn toward the other—all of which is aimed to relax the muscles and ligament at and around the protrusion. The use is then to be gently grasped, and considerably elevated and compressed with one hand, while the forefinger of the other hand presses at each of the horns as possible up to and within the point of protrusion; the *contracted portion* is to be retained while the middle finger pushes up another portion. When the forefinger may be again employed for still another portion; the middle finger holding the part if first brought up, or the ring finger may be used. While the others are both occupied in holding the *advance gained*. In this way the whole tumor is to be removed.

In the *refined egesimal hernia*, the pressure must be directed upward and outward, along the course of the spermatic cord; but in *hemoral* hernia it is to be directed first downward and then backward. In *scabious* and *perforated* forms the pressure is to be made directly backward. Violence must never be used, nor the parts handled as roughly as in *operation* itself.

Several circumstances, however, may interfere with the operation of truss, or defeat its successful result, as extreme distention of the protruded intestine, great pain and tenderness, active inflammation, severe constriction around the neck of the sac, &c.; but these things should not discourage us. We have in cold water or ice a valuable auxiliary for the distressed complexion; its assistance will often enable us to succeed at once. When the part is *excessively tender* and *irritable*, hot water must be brought in requisition. The full warm bath, or local fomentations, or both, may be employed, and these may be followed by

a supplication of the cold process. Our "old school" friends, on their characteristic principle, that when a patient is suffering locally, he ought also to be made to suffer systemically, recommend blistering over, and bleeding to produce *salutem* and *firmam*, with a view of bringing about relaxation and quiescence; but waste water externally, and internally by injection, may be made to produce any degree of those effects which can be desired. After the employment of either of these water processes, the task is to be tried again.

There is yet another resource in bad cases—*dry-cupping*—which Dr. Hill (*Esoteric Surgery*) significantly calls *trepanning from within*, and which is not mentioned in any other work with which I am acquainted. A large cup, or any convenient vessel, may be applied to the abdomen, covering the umbilical region, in which a piece of burning cotton is placed to exhaust the air; the "suction" thus established will pull upon the protruded intestine which we may be pulling down without. Holding the patient's heels up, and head down, and jouncing him in that condition, has succeeded in "deracinating practice," in reducing a rupture, of which Dr. Hill gives a notable instance.

In extreme cases, when the strangulation with inflammation has existed, despite the efforts to reduce it, for twelve or fifteen hours, the only chance for the patient is by the operation with the knife; yet this does not afford him quite an equal chance to live. It consists in making an incision through the skin three or four inches in length, along the course of the tumor, cutting through the superficial layers—described in the first part of this work, under the head of "Anatomy of Hernia"—or coverings, by picking up a small bit at a time with the *Forceps* and cutting horizontally through it with *Hier* point, and an opening into the sac—which can be distinguished by its bluish appearance—is made. "The sac"—I quote substantially from Dr. Hill—"is then opened in the same manner, and the small diameter, fig. 292, inserted, and an opening

Fig. 292.



THE SMALL PROBE.

made large enough to admit a finger. The forefinger of the left hand is

was introduced, fig. 203, and pushed up to the neck of the sac to feel

Fig. 203.



EVULSION FOR STRANGULATED HERNIA.

the stricture, which may be at the internal or external ring, or at both places; the stricture should be sufficiently dilated to permit the finger to enter the abdomen; this may be done by the probe-pointed bistoury, or similar knife, made for the purpose, but edged quite up to the point, and set a short space below it, fig. 204. The blade is pushed up far

Fig. 204.



HERNIAL BISTOURY.

enough, along the finger, and pushed on through the stricture. Its edge

Fig. 205.



CUTTING THE STRICTURE.

is then turned up over, cutting no more than necessary to admit the finger, fig. 205. The cut must always be made directly against, parallel to the linea alba, to avoid the epigastric artery. After



the structure is thus relieved, the pain must be sustained, and if any adhesions have taken place, or any deposits accumulated largely, no attempt at reduction must be made, but the wound allowed to heal. When mortification has taken place, the only chance is by an artificial anus. In femoral or spiral hernia the sac is usually very small, and encloses the bowel very tightly; hence it must be opened with caution.

**RIGIDITY OF THE CERVIX.**—Beyond the time for retarding displacement, and the operation for relieving strangulation, little or nothing has been done for this class of aneurisms in the way of regular surgery, while mechanical skill has generally been content to prevent further mischief by the constant application of a truss. But it has been noticed that in recent cases the pressure of a truss has sometimes excited adhesive inflammation in the parietes of the canal between the abdominal rings, or in the femoral sheath, and thus placed the patient against all future danger. Acting on this hint, others have succeeded in some recent cases by keeping up as strong pressure as the patient could bear, by means of a truss with a large and hard pad, so applied as to compress the whole canal or sheath through which the vessels had passed. Others have succeeded in cases of long standing, by adding to the mechanical pressure treatment, that of caloric irritation, the combined effect of both being to produce the requisite degree of adhesive inflammation to obliterate the canal, sheath, or cavity, where the rupture presents. Professors Monroe and Hill of Ohio, employ an *irritative-plaster*—composed of bloodroot, mandrake, white-sassa, poke-root, tur and resin—large enough to cover the whole canal or sheath—two to two and a half by three to three and a half inches—over which thickness it wears the pad of which is nearly as large as the plaster. The part is first shaved, the plaster applied, and then the truss is adjusted as lightly as the patient can bear, the compression being diminished as the parts grow tender. The truss is removed daily, and the plaster renewed, during which the patient must keep perfectly still in the horizontal posture, with the thighs drawn up to the abdomen. When the truss cannot be longer borne on account of the pain, it is substituted by a compress and bandage; and while these are worn the patient is recommended to keep on his back. A point of practice especially noticed is, that no protrusion must on any account be allowed to take place during the treatment. Should the pain and irritation become intolerable, the plaster is to be omitted for a few days, a slippery elm poultice taking its place; and this the hydropath could readily supersede by simple flour or the surface, over which

warm wet cloths might be applied. It is contemplated, by this plan of treatment, to excite a purulent discharge from the surface covered by the plaster, and to keep up the suppuration from four to six weeks.

The principle upon which this cure is predicated is clearly correct; and a score of physicians, all understanding the principle, might find a score of ways to apply it successfully. It can matter but little what the irritants are, provided they produce precisely the proper degree of irritation, and do not poison the system from absorption. An interesting plaster, made of the extracts of henbane, white oak, green oake, and the succane or rock brock, with the occasional application of a few drops of oil of egg, in combination with the pad and truss, constituted the empirical but rather successful plan of Harlan's treatment of hernia, for which he obtained a patent.

**UMBILICAL AND VENTRAL HERNIA.**—Infants are most subject to umbilical hernia; the protrusion is generally expelled in screaming while crying, when the abdominal bandage which is placed around the body is too loose. There are some very great errors which have crept into professional men's minds. The truth is, that this bandaging the body is just what produces the rupture in a large proportion of cases. It is this that makes the child cry and strain; and the tighter the abused infant is girdled with it, the more it will cry and strain, and the more liable it will be to form a rupture. It sometimes occurs in parturition besides from the muscles giving way during the powerful contractions upon the gravid uterus.

**Treatment.**—The protruded portion of bowel can generally be reduced very easily by the hand, after placing the patient on the back, with the shoulders moderately elevated, and the thighs flexed upon the abdomen. A sufficient degree of adhesive inflammation to effect a radical cure may be excited by a washblotting of the skin exposed for the preceding varieties. A much less amount of external irritation will usually answer the purpose, and the pad of the truss, by which the compression is made, must be so adjusted that the pressure will keep the sides of the aperture constantly in contact. Dr. Hill gives the following directions for the mechanical treatment, which I copy to the best effect:—"Take a circular piece of the thick spongy portion of sole leather, of the proper size to cover the opening, and extend from one and a half to two inches all around it. Excise the fleshy side of the leather, so as to make it regularly convex, the center of the depression being about half an inch below the plane of the circumference. Place the patient in the position for reduction, and bring the pulsation of the hole in the muscles in contact, so as completely to

also the arifice, by pressing from the sides, while the muscles are in this relaxed condition. The edges being thus kept in contact, apply, directly over the point of protrusion, a layer of soft cotton or silk lint, wet in a strong decoction of white-oak bark. This application should be just large and thick enough to fill the concave surface in the bottom, without causing any pressure. Apply your leather pad over it, and secure it by a bandage passed round the body, sufficiently tight to compress the muscles, and keep in contact the parties of the operation. It is better to fasten the pad to the bandage before it is applied. This should be kept on six or eight days without being removed, unless it produces too much irritation. It should be wet once or twice a day with the oak decoction, by applying it upon the surface and allowing it to soak through the pad and sutures." One or two weeks will often suffice to produce adhesion in an infant, while an adult may require the treatment for one or two months. While removing the dressings the patient must be placed in the position before described, and the walls of the abscess firmly held by an assistant, so that no motion be allowed to interrupt the adhesive process.

## CHAPTER VIII.

### DEFORMITIES.

THE deformities which result from accident, disease, or malconformation, are innumerable; but an understanding of the principles which apply to the management of those which are common, will readily suggest the modifications applicable to unusual cases.

**HAND-LEG—LAMBEN LEPONTUM.**—This is a fissure in the spine by which may be single or double. In the former case it is usually on one side of the usual line, in the latter each fissure extends downward and outward from one of the vertebra, as in fig. 205. In some cases the fissure extends backward through the pelvis bone, and often the lower teeth project through the fissure, adding greatly to the deformity.



DOUBLE HAND-LEG.

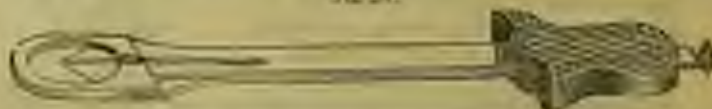
**Treatment.**—The operation of tying by the internal artery is the

*only recently.* The edges of the tongue are raised with the fingers or *forceps*; a flat piece of wood is placed between the *teeth* and *gum*; and the edges are then pulled off from both sides upon the wood with a hooked or *hook*, leaving the edges straight like the shape of the letter V. The bleeding can be stopped by sponging with cold water; after which a thin silver needle is passed through and across the incision from below upwards; the needle must penetrate nearly to the inner surface of the *teeth*, which will keep the wound edges together while the ligature secures the outer edges. After this needle is secured by the third wire others are to be introduced close at proper distances, and the part dressed with wet *lint* over which a *bandage* is applied, and kept constantly wet with cold water. Adhesion will take place in about a week, during which time the patient must be kept very quiet; after this time the position may be relaxed and adhesive straps applied. When the disease exists each side is to be treated in the same way, and both should be operated upon at the same time. When projecting teeth are in the way they should be extracted.

*Thin Veillets.*—Notwithstanding I have had some fifty applications to cut *labeled* ligatures, I have never yet seen a case of this kind. It is an extremely rare occurrence in reality, though very apt to exist in the imagination of nurses. When the *flexure* ligature is extended to the tip of the tongue, firmly holding the "narrow" member to the floor of the mouth, and preventing the child from sucking, it is a *linguist*; and then the surgeon may elevate the member with one or two fingers, and snap the string across as near the floor of the mouth as possible, with a pair of scissors. The cut should rarely extend beyond one eighth of an inch.

*ENLARGED TONGUE AND UVULA.*—These are rather uncommon than deficiencies; yet it is sometimes advisable to excise them. The proper instrument for doing this, *fig. 337*, has an angular or rounded

FIG. 337.



INSTRUMENT FOR REMOVING THE TONGUE AND UVULA.

Hook, which can be drawn back, leaving a ring to be passed over the part to be removed, after which the body, armed with a needle to pierce the external portion falling into the throat is pushed forward against the tissue.



**SPASM OF STRABISMUS.**—In the majority of cases of permanent squinting, the difficulty is owing to a disproportion in motion in the recti muscles, one being too much relaxed and the other preternaturally contracted. The relaxed muscle is a diameter of the contracted muscle, and this is usually the internal rectus. The eye is raised and held by the screw-plate apparatus, fig. 202; a doublehook is then

FIG. 202.



INSTRUMENT APPLIED TO THE EYE.

applied to the conjunctiva midway between the margin of the cornea and internal canthus, by which the ball is pulled outward, as represented in fig. 203, and the handle then held by an assistant. The operator next raises the conjunctiva with his hook-forceps, cuts into it perpendicularly with the curved saw-eyes, and continues to raise and divide the cellular tissue until he reaches the muscle, when he severs it with the scissors.

If the muscle has been completely divided, the patient, on turning the eye released, will be able to turn it in all directions, except directly forward. After the operation, the eye requires to be kept covered for a day or two with a wet cloth.

FIG. 203.



OPERATION FOR STRABISMUS.

**SUPERFLUOUS FINGERS AND TOES.**—Superfluous appendages to the hands and feet are not of much consequence; but as they are not usually attached by a regular joint, they may readily be got rid of by means of the ligature or knife.

**WEB FINGERS.**—These only require division by the scalpel and to

be prevented from rotating by a piece of cloth kept between the fingers until cicatrization takes place.

**Wey Neck.**—If this deformity is so great as to render an operation desirable, the contracting muscular tendon or bands as it is divided with the knife. The incision should be as superficial as possible; when the muscle has been roughly divided, it will snap back. The hemorrhage can be prevented by the ordinary compress.

**SPINA BIFIDA—HYDRO-CEPHALUS.**—There is a possibility of curing some cases in which the malformation consists in rather thick and firm by reason of a loose compress and bandage, applied to dorsally right, and so adjusted as to press the tumor down to a level with the surface. If inflammation exists, the cold water-dressings must be added.

**SPINA CURVATURA.**—These deformities, which have been considered in the preceding part of this work, are rather medical than surgical malities; and the subject is only introduced here to add an ocular demonstration of the theory advanced in relation to their predisposing and proximate causes. Fig. 218 is a representation of a single curve.

Fig. 211



DOUBLE CURVATURE

Fig. 212



MISPOSITION OF NECK

late in its forming stage, commenced by a habitually improper position at a work-table, which is raised too high. Those who have a clear idea of the manner in which these ulcers originate, will at once appreciate the absurdity of the ordinary treatment with mechanical machinery and surgical amputation, by which many poor limbs have been cruelly tortured and many bodies permanently crippled. An extreme result of the same cause is seen in the curvature, fig. 211.

*Scrofulous persons*, from their greater facility of luxury of organization, are peculiarly liable to lateral curvatures, when exposed to any causes which debilitate the muscular system, or throw the different sets of muscles out of balance.

In double curvatures the disposition of body is generally connected with causes which tend especially to debilitate the abdominal muscles, as emaciation, hot drinks, febrile beds, &c.

**Herniagonal Torsion.**—This is both a cruel disease and a horrid deformity, as the accompanying representation will bear witness, fig. 212, and I introduce the subject in this place for the especial rea-

FIG. 212.



poies of protesting against its cause, and against the treatment which these physicians whose "leading art" creates the disease, recommend to cure it. This treatment consists in making long and deep incisions into the tongue with a scalpel. It is not strange that these practitioners, whose "remedies" produce such consequences, should be the poorest doctors in the world when these consequences themselves require medication. Nothing will reduce this violent morbid inflammation equal to the hot-sheet pack, so managed as to produce moderate but frequent perspiration. At the same time the throat must be kept very free with tepid injections, the wet compress applied to the neck, the mouth frequently rinsed with cool but not very cold water, and sips of cool or cold water—as either is most agreeable to the patient—swallowed whenever the patient has the ability to swallow. When the body is extremely sensitive to cold, a tepid ablution, followed by the dry pack, is the best way to produce a perspirable condition of the skin, and this may be frequently repeated.

Professor Chapman, in a text-book for medical schools (*Manual of Medicine*), tells us that "Occasionally mercury, from some unaccountable cause, instead of operating as a remedy, acts as a poison;" and Dr. Thacher, author of two standard works (*American Practice of Medicine*, and *American New Dispensatory*), informs us that "mercury can be given or regarded to regulate its administration" or obviate the uncertainty always attending its introduction into the human stomach; and surely such authorities sufficiently sustain the protest here entered against destroying any more tongues, teeth, gums, palates, jaws, and lips—I have seen one case in which both lips were eaten off by a mercurial action—and ruining any more vociferations by this Paracelsian quackery.

**FRACTURATIONS.**—This is an unnatural or false joint, resulting from a failure of the portions of a fractured bone to unite by ossification or callus; it may be caused by morbid habit of body, or the fault may arise from the fractured bones not being properly brought into contact. A ligamentous capsule forms around the extremities of the broken bones, which finally become rough and fused; and in some cases a regular ball-and-socket joint is formed. The most hopeful plan of treatment is to put a joint-needle, armed with a chain of silk, through the flesh between the ends of the bones, by means of which a running wire may be kept up for six or twelve months, and possibly effective ossification excited and a re-union produced.

**CURE-FORT—VAIETEA.**—Surgeons distinguish four varieties of this



**defect.** In the first—*talipes varus*—fig. 213, the foot is turned  
 Fig. 213 Fig. 214



TALIPES VARUS.



TALIPES EQUINUS.

inward, the patient walking on the outside of it, the heel being ex-  
 posed. In the second variety—*talipes equinus*—fig. 214, the

Fig. 215

foot is more or less elevated, the patient walking on the ball of the foot or on the toes, and pressing equally on all the toes, or principally on the sole of the little, or that of the great toe. In the third—*talipes valgus*—the foot is turned out so that the patient walks on the inner surface, the external edge being raised from the ground, and the sole standing outward; and in the fourth—*talipes calcaneus*—fig. 215, the toes and foot are elevated to an acute angle with the leg, the heel resting on the ground.

**Cause.**—The first variety is produced by a retraction of the



TALIPES CALCANEUS.

muscles of the calf of the leg and the adductors of the foot; the second variety is usually owing to a contraction of the gastrocnemius muscle alone, but sometimes the flexors of the knee are also contracted; the third variety is caused by the contraction of the adductor muscles, and also those of the calf of the leg; and the fourth variety is owing to the contraction of the tibialis anticus and the extensor muscles. These deformities are usually congenital, but may result from accidents.

**Treatment.**—The majority of cases can be remedied by proper mechanical apparatus, if it is applied early—say before three years of age. A variety of machines are in use, and the skill of the surgeon is required to adapt one to each particular case. They consist essentially of a stiff shoe or sole, fixed to an upright shaft, to which springs are so attached as to make gentle but constant extension against the contracted muscles. Where machinery fails, or is not applicable, the operation of *tenotomy*—a division of the contracted tendon or tendons—is the only chance. A division of the tendo achillis is sufficient in a majority of cases of the first variety. The skin is drawn tenses so that it will cover the wound when it contracts, and a long, narrow-bladed knife is passed through the skin diagonally between the tendon and the bone, near the anterior surface of the tendon, one or two inches above the internal malleolus, and carried through to the skin on the opposite side; the edge is then turned upon the tendon, and while an assistant bends the foot so as to put the tendon firmly on the stretch, this is cut through, when it will separate with a crackling noise. The limb is kept in an easy position for three or four days, and then placed in a suitable machine to keep up extension and fix it in its proper situation.

The posterior tibial muscle can be most readily divided about two inches behind and above the internal malleolus; the anterior tibial, where it passes over the ankle joint; and the flexor of the great toe on the sole of the foot, where it may be seen and felt projecting like a strong cord.

**CONTRACTED SINOWS.**—A contraction of the flexors of any part of the body is so termed. It is most frequently seen in the fingers or toes overlapping each other. The fingers are also contracted from inflammation, and a "club-hand" is sometimes met with. Some of the cases may be relieved by an incision through the skin; but others require the operation of dividing the tendon or muscle affected—*tenotomy* or *myotomy*.

## CHAPTER IX.

## DISLOCATIONS.

**TECHNIQUE.**—A displacement of one bone from its natural articulation with another is called a simple dislocation, when unaccompanied with external laceration or fracture; and compound and complicated, when those conditions co-exist. Its readjustment is termed *reduction*. The mechanical restraints employed in reduction are *extension*—the force applied by the surgeon to the luxated part; and *counter-extension*—the force employed to fix the body in position, which may be by machinery, such as pulleys, or by the hands of assistants. Dislocations are called *partial* when the bone is moved out of position in its socket, or on its articular surface, without being thrown completely out or off.

**Symptoms.**—A dislocation is known by a change in the external form of the joint; an alteration in the length of the limb; the altered axis or position of the limb. The patient may have the power to move the limb immediately after the accident. When considerable swelling has taken place, it is often extremely difficult to distinguish between a dislocation and a fracture near the joint. When muscles are ruptured, there is great effusion and inflammation in the part.

**Treatment.**—The principal obstacle in the way of reduction is the contraction of the muscles; and this difficulty increases with the length of time the part has been displaced. When luxation has existed for several weeks, adhesions are apt to occur, forming a new joint or an ankylosis, and rendering reduction impossible without a new dislocation, and doubtful with.

Very soon after the accident the displaced bone can generally be replaced with very little force. But when the muscular contraction is strong, we must employ, in addition to extension and counter-extension, warm water to the part to relax the muscles particularly implicated; and in severe cases, the full warm-bath, to relax the whole muscular system; and in extreme cases, the patient must also drink plentifully of warm water, and have the throat frequently tickled, to excite and maintain considerable nausea. The extending force should always begin gently, and be gradually increased, while the counter-extension should, of course, be fixed and uniform. The limb should be slightly flexed, so as to favor relaxation. In dislocations of the shoulder, the

extension bandage should be applied to the forearm; and in dislocations of the hip, above the knee. As the patient's mind, directed to the injury or operation, increases the contractility of the muscles, almost surgeons often contrive some way of diverting it, as the treatment when extension has been carried to a sufficient extent, as by rendering a window, communicating tidings of some awful accident, etc. When the bone returns to its socket, a "snap," like that of a lock when the key is turned, can be heard, and generally felt. The after-treatment is simply a bandage wet with cold water for a few days.

There is a general plan by which many, perhaps a majority, of dislocations, can be reduced by persons entirely ignorant of anatomy. This consists in drawing the limb out of place as much as possible, in the first place—that is, extending it, and then, while the patient's mind is diverted to something else, making a sudden rotary motion, during which the bone generally slips into its place. Many marvelous cures have been told of Dr. Sweet and other "natural bone-setters," who have frequently succeeded by this method, after the scientific surgeon had failed; they were called natural bone-setters, because they were not professionally educated.

The following remarks of Mr. Sney, on "The Reduction of Dislocations Generally," are exceedingly valuable:

"In the endeavor to reduce a dislocation, the line of traction should hold reference less to that of the socket, or surface from which the bone has been displaced, than to the more important purpose of raising it from the surface, on which it has lodged. For example, the rim of the glenoid cavity, in dislocation of the humerus, presents an obstacle to the extension of the bone in the immediate line of that cavity; but if the bone be drawn off it by extension made in any oblique direction, the instant this ridge is passed, the head will rush back into its natural cavity. So, also, in dislocation of the femur on the dorsum illi, we do not attempt to draw the bone in a direct line with the acetabulum, but we carry it below, round its back and elevated margin, and as soon as it reach the lower part of the rim, which is much less prominent than the upper and back part, the muscles immediately restore it to its socket. The same rule holds in dislocation of the tibia and radius backward at the elbow-joint. I believe the exact line of extension to be much more readily determined, and, in truth, a less important subject of consideration, than it is generally deemed. I believe that if we bring the bone sufficiently downward, and place it in the neighborhood of the articulation, the muscles will replace it with as much ease as that which originally dislocated it.

\* The bone appears, as it were, sucked violently into the socket, even



at the instant of its sustaining the greatest force of extension. There is it that the muscles, acting with one accord, set at naught the extending power, and complete the work of reduction, in defiance of all the agents employed at the moment to prevent it. I consider that the muscles are the immediate agents of reduction, and not the surgeon, whose entire duty consists in placing the bone in a position to give them the opportunity of displaying this harmony of action, and of exercising a power, even beyond that of the mechanical agents of extension. It is this power that succeeds in forcibly drawing backward the head of the femur into its cavity, when it has fairly reached the rim of the acetabulum, notwithstanding the force employed at that instant in extending it. In the examples of the larger dislocations, I place no reliance on any of the above-mentioned efforts of manipulation, but depend almost entirely on the act of simple extension, in the fullest confidence of the disposition of the joint to right itself if the obstacles be removed."

**Dislocation of the Jaw.**—This accident arises from yawning or gaping, or from a blow on the chin when the mouth is wide open. It may affect one or both sides. Fig. 225 represents the appearance of the mouth in a dislocation of both articulations. The mouth remains wide open, the valves run constantly, and there is often shivering but not dangerous pain.

**Treatment.**—The reduction is easily effected. Place two pieces of soft wood, or large corks, as far back between the teeth as possible, to act as fulcrums; then, while the head is held by an assistant, press the chin steadily upward and backward.

Another method is: place the thumbs on the back teeth, and the palms of the hands and fingers on the sides and under surface of the jaw; then press downward with the thumbs, and forward and upward with the hands; the thumbs must be removed as the joint slips in its place.

Fig. 225



DISLOCATION OF THE JAW.

**Dislocation of the Clavicle.**—The collar-bone may be displaced at its sternal or acromial extremity; in the former case it is pushed forward or backward,

FIG. 217.



and in the latter generally upward. Fig. 217 shows its situation when dislocated at the breast-bone. In this persons the nature of the injury is obvious at a glance; but with very fleshy individuals the diagnosis is sometimes difficult. Moving the shoulder, however, occasions great pain; and it is with much difficulty that the patient can move it at all.

**CLAVICULO-STERNAL DISLOCATION.**

**Treatment.**—By pulling the shoulder backward and slightly

FIG. 218.

outward, the collar-bone is drawn down to a level with the breast-bone, when the head will readily fall into its proper place.

To retain it in position, see—

FIG. 219.



CLAVICLE BANDAGE BEHIND.

CLAVICLE BANDAGE AFOREHAND.

some have a triangle bandage, which is buckled round the body and bound the shoulders with a soft pad in each armpit, and another on

each shoulder. It is applied in different modes by surgeons, and enclosed like *serre*, as it were, in a sling. A back view of it is seen in fig. 215, and a front view in fig. 217, which will enable any person of ordinary tact to adjust it successfully. The arm is previously supported in a sling.

When the *scapular end* is dislocated, the shoulder on the injured side is *depressed*, as compared with the other, and the *drapes* inward toward the sternum. In reducing it, the surgeon, standing behind the patient, places his knee between the shoulders, and draws them both backward, until the olecrion sinks into its place. The *eye-sling* and *clasp* bandage are so applied as to keep the arm pressing slightly upward and backward. Some degree of deformity will always exist after these accidents.

**DISLOCATIONS AT THE SHOULDER-JOINT.**—The head of the humerus may be displaced *downward* into the axilla, *forward* under the olecrion, *backward* upon the dorsum of the scapula, and partially latented upward against the outer side of the coracoid process.

**Symptoms.**—In the *downward* variety, fig. 220, the head of the bone is readily found in the axilla, or resting on the lower side of the inferior costæ of the scapula; there is a tumor-like projection in the armpit, and a corresponding hollow below the acromion process. The whole form of the shoulder is changed, the muscles being *distended*, and the arm seemingly *elongated*; the elbow cannot be brought to the patient's side without great pain, and the patient inclines to separate his arm from the body and support it with the other hand. When the accident has existed for a considerable time, an effusion of synovia into the joint may occasion a crepitus on moving the arm, something like the grating sound of a fracture. In the *forward* luxation, fig. 221, the head of the humerus can be plainly felt, and generally seen upon the pectoral muscle below the olecrion. The point of the acromion process is very distinct, and beneath it is a considerable hollow. The coracoid process is on the outside of the displaced

Fig. 220.



DOWNWARD LUXATION.

In the *forward* luxation, fig. 221, the head of the humerus can be plainly felt, and generally seen upon the pectoral muscle below the olecrion. The point of the acromion process is very distinct, and beneath it is a considerable hollow. The coracoid process is on the outside of the displaced

head, which, when the arm is rotated, can be observed to move. The elbow is thrown farther back than in the downward fixation, the arm is much shortened, and there is great difficulty in moving the arm in any direction.

In the backward fixation, *fig. 222*, the projection of the head of the

*Fig. 221.*

*Fig. 222.*



FORWARD FIXATION.

BACKWARD FIXATION.

bone is apparent at first sight, and when the elbow is rotated it is seen to move. It may also be felt by applying the finger just below the

*Fig. 223.*



REDUCTION OF AXILLARY LUXATIONS.



spine of the scapula, and the change in the axis of the limb is quite obvious. This variety of dislocation is extremely rare.

*Treatment.*—The general plan of reducing luxations at the shoulder joint, adopted by modern surgeons, is represented in fig. 222. The patient is placed by a recumbent position, and the surgeon, sitting before him, puts his assisted heel on the head of the bone in the axilla, and presses it upward, while he pulls steadily and firmly on the arm, until the head of the bone slips into the glenoid cavity. By this simple management, almost any person, although entirely ignorant of anatomy, may reduce nearly all the luxations that occur at this joint, by taking the case very soon after the accident. If greater force is required than one person can exert, he may be assisted by others pulling behind him, by means of additional straps or bandages placed upon the arm. If this plan fails, greater force can be brought to bear by the method represented in fig. 223. The patient is seated in a chair, and

Fig. 223.



EXTENSION AND COUNTER-EXTENSION.

resistance-extending bandages are applied as to let the arm pass through them. For the extending bandage, a tatted roller, placed around the arm above the elbow, with strips or slips of cloth attached, will answer. The arm is then raised so that the elbow is a little above the horizontal line with the shoulder, and, while in this position, two or more assistants make gradual and steady extension upon it, an equal amount

of force being employed in producing counter-extension at the same time. After the effort upon the muscles has been continued for some time, the surgeon, resting his foot on the chair, pushes his knee into the axilla and presses up the head of the bone, while he presses down on the scapula with one hand; making also slight rotation upon the arm.

There is another method by which a majority of recent dislocations can be easily reduced without waiting for the regular surgeon. Place the patient in a chair, fig. 225, extend the luxated arm as far as possi-

FIG. 225.



REDUCTION OF RECENT DISLOCATIONS.

ble from the side, then, with the knee in the axilla—the foot being supported on a chair, and the head raised so as to press the knee upward—grasp the humerus above the elbow with the hand, pressing down upon the shoulder at the same time. The pulley and counter-extending bandage, seen in the cut, may also be employed if necessary.

In the *forward* luxations, the extension is to be made obliquely downward and slightly backward. The resistance is usually stronger than in axillary dislocations; hence extension must be kept up somewhat longer. When the head of the bone is observed to move, the surgeon should place his knee or hand against it, and press it backward into its cavity. In other respects the management is the same as for the preceding variety.

In the backward location the reduction is easy. After the shoulder is fixed, gradual extension is made directly outward, the head of the bone being thus moved slowly forward into the glenoid cavity. This dislocation has been replaced by merely raising the arm, and turning the hand to the back of the head.

After reduction, the arm should be carried in a sling for several days, and all motion of the joint prevented by suitable bandages.

**DISLOCATIONS AT THE ELBOW.**—Injuries at this joint are very frequently complications of fractures, lacerations, and laceration. Surgeons distinguish five varieties of dislocation. Both bones of the forearm may be pushed backward, or to one side; the radius may be displaced forward; the ulna alone may slip backward over the condyle of the humerus; and the radius alone may slip from its connection of the elbow joint.

**Symptoms.**—When the radius and ulna are both dislocated backward,

FIG. 226.



ELBOW DISLOCATION BACKWARD.

Fig. 226, the posterior projection is very prominent. The olecranon process is above the external condyle, and a deep hollow may be felt on each side of it; while in front, under the triceps, the condyles appear like hard masses. The head and forearm are supine, and cannot be entirely turned.

In the lateral dislocations of both bones, whether inward or outward, they are driven more or less backward. In the outward dislocation, fig. 227, the projection of the ulna is still greater; the coronoid process is fixed at the external condyle; and the back of the radius forms a projection outside and behind the elbow, with an oblique cavity above it. In the inward location, fig. 228, the head of the ulna is displaced behind or over the internal condyle, projecting in

FIG. 227.



LATERAL DISLOCATION OUTWARD.

Fig. 228.



LATERAL DISLOCATION INWARD.

this direction, while the external condyle is made equally prominent on its side by the radius occupying the place of the ulna.

When the ulna is dislocated *backward*, the elevation can be easily felt behind the humerus; the arm cannot be straightened, nor can it be flexed to more than a right angle; the forearm and hand are also moved inward.

In dislocations of the radius *forward*, fig. 223, the forearm is more or less bent, but in attempting to flex it farther, it is suddenly stopped before it gets to a right angle; the elevated head of the radius bears against the fore-part of the humerus, where, if a finger be pressed into the bend of the arm, it may be felt moving. The hand is also in a state of pronation.

In the *backward* dislocation of the radius, fig. 220, the head of the bone may be seen and felt behind the external condyle of the humerus; the arm is nearly straight, and cannot be flexed; the hand is pronate, and cannot be

Treatment.—The first variety is easily reduced. fig. 229.

FORWARD LUXATION OF THE RADIUS.  
Fig. 229.

BACKWARD LUXATION OF THE RADIUS.

direct. The surgeon places his knee on the inner side of the elbow, pressing chiefly on the displaced bone so as to keep them firm, bearing on the end of the hu-



ment, and to bring the coracoid process out of the posterior fossa, so that it can pass over the condyle, while the arm is bent slowly and steadily with considerable force. This form of luxation can generally be reduced with the aid of suitable hot water relaxant processes, a long time after the accident.

The second variety is easily reduced by bending the arm over the surgeon's knee, as in the preceding case; less pressure, however, is usually required, as the bone does not require the same separation from the ligaments.

The third variety is reduced still more easily by the same general plan. Here the bending of the arm is the principal part of the operation, the fixed radius acting like a lever to push the humerus back into its place on the ulna.

To reduce the fourth variety, the surgeon takes the patient's hand, as in "shaking hands," and moves steady extension, while his other hand is pressed strongly on the ulnar side of the head of the radius, pushing it outward and upward. It will facilitate the reduction to have the arm slightly bent.

In the fifth variety extension is to be made upon the radius, and counter-extension upon the humerus, while firm pressure is made on the head of the bone, until it slips into its place. One assistant may make the extension, another the counter-extension, and the surgeon make the pressure and direct the movements of the bone.

**DISLOCATIONS AT THE WRIST.**—Six varieties of luxations occur at this joint. The radius and ulna may together be displaced forward or backward, or either of them separately in either direction.

**Symptoms.**—When both bones are displaced forward, their projection is seen and felt under the carpus. This accident is caused by falling on the palm of the hand. When both bones are displaced backward, they project over the carpus; the carpal bones are thrown for-

Fig. 221.



BACKWARD LUXATION AT THE WRIST.

ward and upward under the flexor tendons, in front of the forearm. This luxation is represented in Fig. 221. These luxations may be dis-

aggravated from sprains, or strains, by the more sudden occurrence and more marked appearance of the swelling.

When the radius alone is displaced, the external or fleshy side of the hand is backward, and the opposite side inward or forward, the extremity of the radius may also be seen to bent a pronounced *u* the front of the wrist. When the ulna alone is dislocated, which more frequently happens, the connecting ligament is necessarily ruptured; the hand is twisted, the bone projects at its back, from where it may be easily pressed down; but when the pressure is removed, the deformity will reappear.

Treatment.—The process of reduction is similar when both bones are displaced either forward or backward. The surgeon holds the hand of the patient in one of his, and with the other supports the forearm, while an assistant holds the arm at the elbow, and keeps that joint slightly flexed. When sufficient extending and counter-extending force is applied, the bones are drawn into place by the contraction of the muscles. Compresses should then be placed upon the wrist, and secured by a roller which should include the limb from the tips of the fingers to the elbow; after which a splint should be added, and the forearm suspended in a sling. The same treatment precisely is required when the radius alone is dislocated. To reduce the dislocated ulna, it is only necessary to press the ulna down in its proper cavity at the side of the radius, and retain it there by compresses, bandages, and splints. The roller should be well pushed, extend along the forearm to a line with the wrist of the hand, and be well secured with a roller.

CARPAL AND METACARPAL DISLOCATIONS.—Displacements of the bones of the wrist are extremely rare; but when they do occur, the hand is to be extended, and the bone pressed down into its place, and then secured by proper compresses and bandages.

Luxations may occur at any of the phalangeal joints, and the smaller bone may project over or under the larger, constituting the posterior

FIG. III.



POSTERIOR PHALANGEAL LUXATION.

fracture, fig. 232, or the scapula, fig. 233. The nature of the accident will be readily distinguished at the first sight.

**Treatment.**—The general plan of reducing dislocated fingers and thumb.



ANTERIOR TRANSVERSE DISLOCATION.

now is as follows: The surgeon places his thumb at one of the divided extremities, and his finger at the other, fig. 234, then makes extension, while the joint is moderately flexed. The reduction will usually be

Fig. 234.



REDUCTION OF DISLOCATED FINGERS AND THUMB.

easily effected; but if a long time has elapsed since the accident, the extension may require to be kept up powerfully for a considerable length of time. In such cases, a piece of tape is usually employed: it is fixed to the finger by what is called the "close-kitch," fig. 235, and to this the extending force is applied.

Fig. 235.

The thumb, which is seldom dislocated, is with more difficulty reduced. It requires great extending force, during which it should be flexed towards the palm of the hand. It should also be well covered with wet tape before the close-kitch tape is applied.



CLOSE-KITCH.

#### DISLOCATIONS AT THE HIP-JOINT.

—The head of the femur may be displaced upward on the osseum of

the bone, fig. 225, or downward, into the foramen ovale, fig. 227, or

Fig. 226.

Fig. 227.

UPWARD DISLOCATION.  
Fig. 226.

BACKWARD DISLOCATION.

Fig. 227.



BACKWARD DISLOCATION.



FORWARD DISLOCATION.



displaced, into the scissoid notch, fig. 239, or forward, as to the patella, fig. 229, in which case it is also thrown upward. The first variety is the most frequent, being the result of violence in an upward and outward direction.

*Symptoms.*—In the first variety the femur rests on the convex side of the pelvis; the limb is shortened from an inch and a half to two inches; the knee closely approximated, yet does not touch that of the other leg; the foot is turned inward; the thigh can be bent over the opposite one, and the round head of the bone can be felt moving upon the ilium. Fig. 240 represents the appearance of the limb while the patient is in the standing position.

In the downward dislocation, the head of the bone can be felt by examining the inside of the thigh, especially in thin persons; the leg of the affected side is about two inches longer than the other; the trochanter is less prominent than on the sound side; the body is bent forward; and when the patient stands erect, the knee projects in advance of the pelvis, and is kept wide apart from it; the foot, though separated, is turned neither in nor out, fig. 241.

Fig. 240.

Fig. 241.



FORWARD DISLOCATION.



DOWNWARD DISLOCATION.

In the *backward* position, the head of the femur can rarely be felt; the trochanter will be found farther back than normal; the foot and knee are turned inward; the knee is slightly flexed and advanced forward; the heel is raised, and the ball of the great toe rests on the knee of the other great toe, and the limb is shortened from half an inch to an inch, fig. 242.

In the *forward* and *upward* position, the head of the bone is at once discovered in front, and a little above the level of Pouquet's ligament, which circumstance distinguishes the case from a fracture of the neck of the femur; the limb is shortened from one to one and a half inches; the knee is everted; the foot and knee cannot be rotated inward, but the thigh can be flexed, bringing them forward. In the erect position this patient, fig. 243, contrasts strikingly with the preceding one.

*Treatment.*—As the vessels concerned in this articulation are large, and their resistance powerful, it is always prudent to relax the whole

Fig. 242.



BACKWARD POSITION.

Fig. 243.



FORWARD POSITION.

muscular system before attempting reduction. An admirable and very pleasant method of doing this is to envelop the patient in the warm wet-sheet pack, placing hot bottles to his feet and sides, and covering him well with bedding, the affected limb being sustained in an easy position by pillows; while in the pack the patient should drink abundantly of warm water, and after being sufficiently relaxed for the operation, he should be kept well covered in flannel blankets to retain the heat and moisture, and pushing the relaxation. All of these hip dislocations can frequently be reduced by the *rotery*, or "*Sweet's plan*;" but surgeons have a specific and easier method for each variety.

In the *upward* displacement the patient is laid on a table, or placed

Fig. 244



EXECUTION OF UPWARD LITERATION.

on a board, Fig. 244, covered with a quilt or blanket; a strong *ceaster*, *extending strap* is passed between the legs—a sheet split in two, and folded into the width of four or five inches, will answer; this is passed up before and behind the hip; so placed as to press upward on the perineum, at the inside of the dislocated limb, and fastened to some *stitching point*. A wet *linen*, of eight or ten turns, is applied around the limb, above the knee, and so that the *extending straps* are attached. These are to be drawn upon by the assistants in the direct line of the limb; or, what is better, attached to a pulley, so stationed that the *extensors* may draw in a direct line with the fastening of the *rotator-extensors*. The force is to be steadily increased as long as the patient can well bear it, then held stationary for a few moments, until he begins to complain, then again increased, and so continued until the head of the bone reaches the edge of the socket, when the surgeon rotates the limb a little, and withdraws the hand until it enters the *acromion*. The *snapping noise*, at the head of the femur slips into its socket, when the *extensors* is made by *normal force*, is not always

board when the force is more steadily and gradually applied by the pulleys; but it is sometimes necessary to maintain the feet of its replacement by actual measurement; and until this point is settled the extension should not be stated. In some cases the head of the bone is held fast over the edge of the socket; to prevent this a towel or handkerchief may be placed round the thigh, as high up as possible, and the bone lifted by it at the proper moment.

The above is the plan approved and recommended by the best "standard authorities;" but, after all, it is probably neither the best method, nor founded on true mechanical nor physiological principles. A very different and much more easy plan for both surgeon and patient, which depends with the least of traction entirely, was practiced successfully many years ago by the late N. Smith, of Yale College, and has since been adopted by Dr. Cartwright, of Natchez, and recently explained by Dr. Reisk, of Rochester. It is as follows: Place the patient on his back, without fastenings of any kind, the leg flexed on the thigh, and then strongly abducted—carried toward; in this condition the abduction is continued by flexing the thigh on the pelvis, until the knee is as high as the umbilicus. This plan is prolonged—correctly, I think—on the idea that the dissection of the small muscles constitutes the main obstacle to reduction, instead of the contracting and resistance of the large ones.

The reduction of the downward luxation is much easier than that of the upward. The patient is placed on the back, the thighs sep-

Fig. 362.



REDUCTION OF DOWNWARD LUXATION.

arated, fig. 365; a folded cloth is placed over the perineum, so that when the ends are drawn upon the force will bear against the inner



and back surface of the bone. Another strong band is joined transversely round the point, above the scoulthorn, the front end passing over the former strap, as we have given it a more spread direction. The force is then applied, as in the former case, and as the head of the bone begins to rise, the surgeon passes his hand under the opposite leg, and, seizing the neck of the affected one, brings it gently, yet firmly, toward the other; by all of which movements combined, it is brought into its socket.

The third variety, *dislocation backward into the ischiatic notch*, is the most difficult of all to reduce. The patient is placed on his sound side

Fig. 245.



REDUCTION OF BACKWARD DISLOCATION.

on a board or table, fig. 246, with the affected thigh drawn over the middle of the other. *Extension and counter-extension* are made in the same way as in the first variety, with the addition of a strap around the upper part of the thigh, which is carried over the shoulders of an assistant, to raise the head of the bone at the commencement of the operation, out of the notch, or impart a lifting direction to the retreating force. The surgeon may also press the trochanter forward with his hand.

In reducing the *forward and upward* luxation, the patient is placed

Fig. 247.



REDUCTION OF FORWARD DISLOCATION.

on his sound side, the counter-pressing force fixed somewhat in front of a line with the body, the point of extension being as much behind, fig. 247. The forces are intended to be so arranged as to draw the limb backward as well as downward. The lifting strap is to be employed as the extension progresses, as assistant pressing down on the pelvis, as the surgeon raises the head of the force over the pubis and edge of the scrotulum.

Fig. 246.

OUTWARD DISLOCATION  
OF PATELLA.

Fig. 248.



DISLOCATION FORWARD.

**DISLOCATIONS AT THE KNEE-JOINT.**—The patella may be displaced outward, inward, or upward; and the tibia may be dislocated from the femur forward, backward, or to either side; the lateral displacements, however, are only partial.

**Symptoms.**—The outward dislocation of the patella, fig. 248, is more frequent than the inward; but in either case the knee is partially flexed, and the joint immovable; the patient also complains of a distressing pain in it. The upward displacement, which is attended with rupture of the ligament, is perfectly obvious to the sight.

In the forward dislocation of the tibia, fig. 249, the head of the bone is seen and felt above the

Fig. 249.



DISLOCATION BACKWARD.

front of the condyles, these being perceived in the popliteal space. There is also numbness of the foot, from pressure on the nerves and popliteal artery.

In the *anterior* position, *fig. 250*, the knee is sensibly bent, and somewhat diminished; the condyles project; and the flexure of the knee is backward instead of forward, the foot being drawn forward.

In the *lateral* displacements one condyle of the femur rests on the head of the tibia, where the other condyle belongs, the displaced one projecting externally or internally, as in *fig. 251* and *fig. 252*.

Fig. 251.



Fig. 252.



LATERAL DISLOCATION EXTERNALLY.      LATERAL DISLOCATION INTERNALLY.

**Treatment.**—To reduce the *anterior* dislocation, the patient is placed in a recumbent posture, the knee raised by the heel, to relax the extensor muscles, and then the displaced bone is pressed down to its place, the force being applied to the edge most distant from the joint. The *apical* dislocation is easily reduced, but with difficulty kept in its place, on account of the rupture of the ligament. The roller, skillfully applied from the toes to the groin, will generally answer; and this may be assisted by a straight splint fastened under the whole length of the leg.

All the varieties of lacerated tibia are reduced by the same plan, which is chiefly that of simple extension. The pelvis is fixed, and a bandage placed round the ankle by which the extension is made. While the assistant pulls upon the ankle, the surgeon presses upon the separated head of the bone with his hands.

**DISLOCATIONS OF THE ANKLE.**—The ankle joint may be displaced inward, outward, forward, or backward. The accident is frequently complicated with fracture.

**Symptoms.**—In the inward dislocation, *fig. 333*, which is the most common, the foot is turned out, and a tumor is formed by the internal malleolus pressing strongly against the skin, which seems ready to burst; the joint, however, is still movable. A depression very generally be felt about three inches above the ankle, in which case the fibula is fractured. The outward dislocation is known by a corresponding deformity on the other side. In the forward dislocation, *fig. 334*, the foot is shortened, the heel elongated, and the toes point downward. The backward dislocation, which rarely occurs, is manifest to the sight.

**Treatment.**—The manner of reduction is essentially the same in all cases. An assistant, holding the foot by the heel and toes, flexes the leg to a right angle with the thigh, and, while the thigh is held fast by another assistant, just above the knee, makes extension at the ankle, the surgeon at the same time pushing the end of the tibia into its place.

Fig. 333.

Fig. 334.



INWARD DISLOCATION.

FORWARD DISLOCATION.



Splints and bandages are necessary, and wet cloths must be frequently applied, as there is usually considerable inflammation.

**Dislocations of the Foot.**—When the tarsal or metatarsal bones are displaced, the nature of the injury is obvious. Reduction is effected by extending the foot and pressing upon the displaced bone at the same time. Compresses and bandages are necessary.

Dislocations of the toes are managed precisely in the same way as dislocated fingers.

## CHAPTER X.

### FRACTURES.

**Technology.**—A fracture is called *transverse* when the bone is broken directly across; *longitudinal* when it is split lengthwise; and *oblique* when broken in other directions. When the fracture is not accompanied with an external wound, it is called *simple*; when the soft parts are so lacerated that the fractured bones protrude, it is termed *compound*; when occurring in connection with a dislocated joint, it is termed *complicated*; and when the fractured bone is divided into several fragments, it is called *comminuted*.

**GENERAL MANAGEMENT OF FRACTURES.**—Although a few general principles are applicable to all cases, so great is the diversity of circumstances attending these accidents, that much must be left to the sound judgment and mechanical skill of the operator. A great variety of splints, bandages, and other apparatus have been invented, all intended to keep the injured parts in contact until the broken parts of the bone unite.

The *process of re-union* is as follows: Coagulable lymph, fibrin, and blood, thrown out by the vessels of the part, form a material which slightly glues, as it were, the bones together soon after the injury: in the next place, a *provisional cartilage* is formed around the parts like a capsule, *loosely supporting them*; this gradually hardens, by *osseous deposits*, into a bony ring, called the *provisional callus*, which binds the parts still more firmly together. After this the proper substance of the bone is formed, the *osseous process* going on for several months or a

year; and when it is completed, the provisional support is removed by absorption.

The period at which the reparative process commences and terminates, varies with the structure of the bone, age, and habits of the individual, etc. The provisional union evidently begins between the sixth and tenth day, and is completed in four to six weeks. The sooner, however, that fragments are adjusted, the better; and about the sixth or seventh day, when the "knitting" may be expected to commence, the part should be examined and accurately adjusted, if need be; after which it only requires to be kept quiet. Great care must be taken to leave the part easy and quiet from the sixth to the twelfth day—in all persons for eight or ten days longer—after which slight motion may be allowed. The symptoms of the provisional ossification, "knitting of the bone," are itching and prickling sensations in the part.

**FRACTURE OF THE CRANIUM.**—Any of the bones of the skull may be cracked, the fracture extending in different directions from a central point; or cracked through one or both plates in a straight line. The skull bone may also be bent without being fractured. In the case of fracture, a crepitus can be felt through the skin; and if any portion of bone is driven in upon the brain, symptoms of compression will be present.

**Treatment.**—All the constitutional and local measures heretofore recommended for compression must be employed in conjunction with the appropriate treatment for any degree of inflammation that may attend. But if the symptoms of compression continue after the inflammation has subsided, the depressed bone must be elevated by trephining, which should only be attempted by a skilful surgeon.

**FRACTURE OF THE NOSE.**—These accidents, though occasionally severe, are not usually dangerous, and their nature is apparent from the resulting deformity. They can

Fig. 253.



FRACTURE OF THE UPPER JAW.

be adjusted by pushing out the depressed bone by a silver catheter or some similar instrument, introduced within the nostril, while the fingers support them on the outside.

**FRACTURE OF THE LOWER JAW.**—The accident commonly occurs at the middle of the chin. fig. 255, although it may take

place in any part. The crepitus felt on moving the bone will determine the exact locality of the fracture; a depression may also be felt at the place.

Treatment.—The adjustment is effected by elevating or depressing until all the teeth are arranged properly with respect to each other and to those of the upper jaw. Should one of the condyles be displaced at the same time, it must be reduced previously to setting the broken bone. The jaw must be secured—the mouth being kept shut—by means of a strip of adhesive plaster, two and a half inches wide, ex-

Fig. 258.



bandaging from ear to ear over the chin. The plaster should be spread on fine leather, or calfskin; and over this a bandage of strong muslin, two yards long and two and a half inches wide, split down each end so within six inches of the middle, is to be applied. A hole is made in the center for the chin; the two lower ends are brought up over the top of the head, and the two upper ends are carried horizontally round to the back of the neck; several turns with each pair are then made, over and around the head, where they are fastened at their ends and also at each crossing. In the absence of adhesive plaster the compress and roller, fig. 356, will answer all purposes. The compress under each ear is held by an assistant with fastened by the first turns of the roller, which is an inch and a half in length and four or five yards long; the first vertical turns are repeated over each other several times, followed by the horizontal ones above the ear over the occiput and forehead, and lastly, several turns below the ear and lip. Pins or stitches are applied wherever the roller crosses or changes direction.

**FRACTURES OF THE SCAPULA.**—When the body of the bone is fractured across, there is scarcely any deformity, but a crepitus is easily recognized on pressure. The only surgery required is a bandage so applied as to restrain those motions of the chest and shoulders which affect the fractured bone.

When the acromion process is fractured, a depression is manifest; the separated portion of bone is drawn downward and forward; and, on pressing the arm upward, a crepitus may be felt. The adjustment consists in pressing the head of the humerus up, by which the fragment is carried to its place, and securing it by the clothe bandage, omitting the pads or compresses under the arm.

When the neck of the scapula is broken, the head of the humerus can be felt in the axilla, as in dislocations, and the acromion appears very conspicuous from the depression beneath. The fracture may be distinguished from dislocation by the crepitus perceived on pushing the arm upward and outward, with the thumb placed on the coracoid process, and the fingers in the axilla. The parts can easily be replaced and held in apposition by the clothe bandage and a wedge-shaped pad under the arm.

**FRACTURE OF THE CLAVICLE.**—A fracture of the collar-bone, which is usually oblique, and occurs near its middle, fig. 357, is readily detected by passing the finger along the edge of the bone. Crepitus is seen on moving the shoulder.



The adjustment and dressing are essentially the same as in the case of a dislocated clavicle at its sternal extremity. The surgeon, placing

FIG. 277.



FRACTURED CLAVICLE.

his knee between the two limbs, draws them both back until the parts of the broken bone come into their proper position, and, while the shoulders are kept back and the arms down, by suitable apparatus, or the hands of assistants, the bandage is applied.

**FRACTURE OF THE STERNUM.**—The breast-bone is never broken, except by great force directly applied. The accident is manifested by a depression at the injured point, and pain and crepitus which attend the movement of the thorax in respiration. Its adjustment requires the roller around the chest, so applied as to stop all motion; the respiration being carried on wholly by the abdominal muscles.

**FRACTURE OF THE RIB.**—The ribs may be fractured at their costal or sternal extremity. The former case is frequently accompanied with dislocation. The latter, though generally called "dislocation of the cartilage," is really a rupture, and a rupture is much more like a fracture than a dislocation. A depression and crepitus may be detected by passing the finger along the rib. If the cartilage is torn from the rib, this bone will project.

**Treatment.**—In a majority of cases a broad roller, applied around the chest so firmly as to prevent all motion of the intercostal spaces, will be sufficient. When a rib projects, the compress must be applied; and tapes, carried over the shoulder and fastened to the roller, near the spine and sternum, are necessary to prevent it from slipping

down. Is extensive or complicated fractured, stiff adhesive plaster, or even gun-shellac cloth, or wetted patchboard, fixed to the part, are useful additions. Preceding the operation of joining the bones or cartilages down to their proper position, the patient should in all cases be directed to take a rather deep inspiration, and also to hold his breath as long as possible during the adjustment.

**FRACTURES OF THE SPINE.**—The transverse processes of the vertebrae may be broken off without serious inconvenience, and may be treated like fractured ribs. When the body or articulating surface is fractured, the injury is irreparable. Fractures about the fourth vertebra of the neck cause instant death; above this further vertebrae, they are fatal in a few days; and below these are fractured, the patient suffers various lag. Paralysis affects all the parts whose nerves are derived from the spinal cord below the point of injury.

**FRACTURES OF THE PELVIS.**—These are only produced by extreme violence, of a crushing kind. They are always dangerous. The patient should be placed in an easy horizontal position, and handled as little as possible. The nature of the injury will aid the diagnosis as to the particular point of fracture; and generally crepitus can be felt by placing the hand in the crease of the thigh, while motion is made at the spine or lower extremities. A roller around the pelvis, with a strap under the nates, and attached to a pulley over the bed, so that the pelvis can be raised without effort on the part of the patient, constitutes the principal surgery.

**FRACTURES OF THE HUMERUS.**—The bone is usually fractured near its middle, but may be broken near either extremity; when fractured near the neck, the injury is not easily distinguished from dislocation.

**Symptoms.**—A fracture in any part of the shaft, as in fig. 228, may be detected by the obvious deformity; the parts of the bone are drawn out of line; the patient experiences pain at the injured point; he is unable to move the limb; and a crepitus can be noticed by rotating the lower portion of the arm, while the upper part is fixed. The direction and extent of the fracture may be ascertained by feeling from the condyles upward with the finger.

Fracture of the neck, fig. 229, seldom occurs except in old persons. By rotating the arm behind the elbow, a crepitus will be felt. The roundness of the shoulder is not diminished, as in dislocation.



FRACTURED SHAFT.

FRACTURED NECK.

Fractures near the condyles, fig. 228, are liable to be mistaken for dislocation of the humerus. When the fracture is above the condyles,

Fig. 228.



FRACTURE ABOVE THE CONDYLES.

the nerve will be shortened; and in all cases the grating of the broken pieces can be felt; the radius of the elbow is but little impeded in fracture, which is not the case in dislocation.

**Treatment.**—When the *clavicula* has been broken, sufficient extension need first be made; the fractured arm is next to be accurately adjusted, so that the appearance and length of the limb will compare well with its fellow; the roller is then to be applied—the parts being held in juxtaposition, maintained, by an assistant—either loosely from the elbow to the shoulder; two or four splints—four are better—about a quarter of an inch in thickness, are then placed at convenient distances, so as evenly to support the arm; the roller is then continued down over the splints, and back and forward, until the splints are sufficiently secured; the forearm and hand are lastly to be suspended in a sling from the neck.

When the neck of the bone is broken, a wedge-shaped pad in the axilla is necessary; the *axillary* or *parashield* splint should be applied on the outside and over the top of the shoulder, and the whole fastened by the clavicle bandage.

In the case of fracture above the *condyles*, after the proper adjustment, the roller is to be first applied loosely around the arm and forearm, and then over two *axillary* splints, which should reach nearly from the shoulder to the wrist, one being applied on the front and the other on the back of the arm.

When the *condyles* themselves are fractured, the separated portions of bone are to be pressed together, and a splint or cloth cap applied, reaching to the wrist, preceded, of course, by the roller. Some degree of deformity will always exist after these injuries.

FIG. 201.



**Fractures at the Elbow Joint.**—Fig. 201 represents the *olecranon* process broken off and drawn up on the back of the arm, *en masse*, of course, with a rupture of the ligaments. The patient can bend the arm easily, but cannot straighten it. There is also great pain at the point of injury.

**Treatment.**—The inflammation must first be subdued; then the arm is to be bandaged rather tightly from the ends of the fingers to the elbow; the broken end of the bone is next to be brought to its place, and included in the turns of the roller, which should be continued half way up the arm; the roller is then turned back and passed above, and the elbow joint bent a dozen times in the form of the figure 8; after it is continued upward, including the whole arm. Lastly, a strong splint is to be placed in front of the joint over the bandage to prevent flexion.



The coronoid process is sometimes fractured separately, attended necessarily with a backward location. It impedes the bending of the elbow. Its adjustment only requires the flexure of the forearm, and its retention in that position by proper bandages and splints. This fracture, and also the two preceding, unite by a ligamentous, instead of bony union.

**FRACTURES OF THE FOREARM.**—Both bones may be fractured together, or either of them singly. Fig. 252 represents a fracture of both bones, with a view of the interosseous vessels, whose contraction tends to draw the bones together, so as to prevent the circular movement of the radius round the ulna.

FIG. 252.

FRACTURE OF THE  
ULNA AND RADIUS.

When the radius alone is fractured, fig. 253, the depression and crepitus readily point out the place of injury; and the same symptoms on the opposite side of the arm denote a fractured ulna, fig. 254. The surgeon, in all these accidents, has only to push the bones up from the wrist, until the finger comes to the divided part, when a depression will be felt; and by fixing the elbow, and rotating the wrist, the crepitus will be experienced.

The lower end of the radius is sometimes fractured near the wrist, where the hand is deviated, and appears very much like a dislocation, fig. 255;

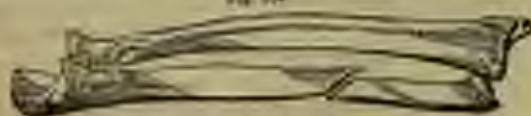
FIG. 253.



FRACTURE OF THE RADIUS.

256, in moving the hand, the styloid process of the radius moves with it, which is not the case when the bone is dislocated.

FIG. 254.



FRACTURE OF THE ULNA.

**Treatment.**—In the first variety—fracture of both bones—the most important point in the treatment is to keep the bones apart. After ad-

Fig. 202.



FRACTURE OF LOWER END OF THE RADIUS

justing the bones, by making the necessary extension at the wrist, the arm should be bent at a right angle, with the elbow midway between pronation and supination; the loose roller is to be applied, and then, fastened by two splints, one on the inside, and the other opposite, which should be covered on the side next the arm, and well padded with cotton; the splints are, lastly, to be secured by a roller extending from the hand to the elbow.

When the radius alone is fractured the hand may hang loose, and thus exert some degree of extending force on the bone. When the ulna alone is broken the hand and forearm should be kept in the same line, and the splint and bandage should extend to the ends of the fingers.

The splints should in all these cases, as a general rule, be worn not more than twelve days; but the compress and bandage should be continued a week or two longer.

The only point of difference in the treatment of a fracture at the lower end of the radius, is in adjusting the pads and compresses that they may aid in keeping the two bones apart and the fractured portions together at the same time. Though passive motion may be employed in three or four weeks to prevent ankylosis, no great exertion should be made by the hand for several months.

**FRACTURES OF THE WRIST, HAND, AND FINGERS.**—These accidents require a band splint fixed to the front of the wrist and hand, with the ends slit for the fingers, the parts being well padded to secure equal pressure, and the splints fastened by the roller. Splints may also be adjusted to the sides and back of the fingers. A single finger bone may be fixed with four small splints secured by tape.

**FRACTURES OF THE THUMB.**—The neck of the thumb may be fractured with or without the capsular ligament; the trochanter major

may be broken obliquely; and the shaft at or near the trochanter, in its middle, or near the condyles.

*Symptoms.*—The fracture within the ligament is represented in fig. 206, generally united by a ligamentous substance, or a double joint is formed, and the limb permanently shortened.

The accident is known by the inability to stand on the leg, the limb being shortened one or two inches, the knee and foot turned out, and the limb inclining to rest on the other limb above and behind the malleolus, fig. 207. Boreo pain is felt on moving the limb, and a crepitus will be recognised on rotating it. Sometimes, however, the shortening of the limb does not occur until several hours after the accident; and in some rare cases it is said the foot turns in instead of being everted.

In fractures within the ligament, the pain and swelling are greater—often extreme; the limb is not materially shortened nor everted, and crepitus is more easily felt.

In fractures within the ligament, the pain and swelling are greater—often extreme; the limb is not materially shortened nor everted, and crepitus is more easily felt.

When the bone is fractured obliquely through the *trochanter major*, the leg is everted, a little shortened, and a fissure can be felt between the shaft and trochanter.

When the shaft is broken just below or near the trochanter, the psoas and internal iliac muscles draw the superior fragment of bone upward and forward, causing great pain and deformity.

When the shaft is broken between the trochanter and condyles, the deformity, crepitus on extension or rotation, and inability to bear weight upon the limb, determine the nature of the case. If the fracture be oblique, the limb will be much shortened by the broken parts dis-

Fig. 206.



FRACTURE WITHIN THE CAPSULE.

Fig. 207.



FRACTURE WITHIN OF THE FEMUR.

ping by each other; and this may be the case also in transverse fractures. The condyles of the femur are seldom broken except in old persons, and the accident is not infrequently fatal.

Treatment.—Sir Astley Cooper, in speaking of the various methods for treating fracture of the neck of the femur within the capsular ligament, says:—"Refrained in all our attempts at curing these cases, and finding that life of the patient occasionally sacrificed under the truth made to cure them, I should, if I sustained this accident in my own person, direct that a pillow should be placed under the limb throughout its length; that another should be rolled up under the knee, and that the limb should be thus extended until the pain and inflammation had subsided. I should then daily rise and sit in a high chair, in order to prevent a degree of flexion which would be painful; and, walking with crutches, bear gently on the foot at first, then gradually more and more, until the ligament became thickened, and the muscles increased in their power. A high-heeled shoe should be next employed, by which the hob would be much diminished. Our hospital patients, treated after this manner, are allowed in a few weeks to walk with crutches; after a time a stick is substituted for the crutches; and in a few months they are able to use the limb without any artificial support."

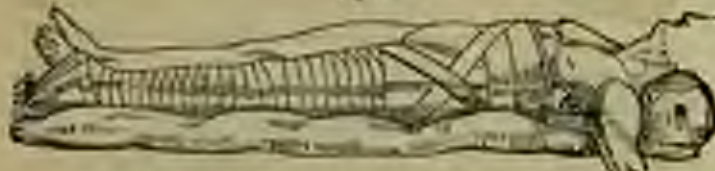
Fracture of the neck outside the capsular ligament, admits of similar treatment, though this does not always result. Sir Astley's plan of adjustment, so simple and practical as any, is thus described:—"In the treatment of this injury, the principles are to keep the bones in apposition, by passing the trochanter toward the anastabasis, and to preserve the length of the limb. The foot and ankle of the injured side should be firmly bound with a roller to the foot and ankle of the other leg [which is to be kept straight], and thus the unoperated side will serve as a splint to that which is fractured, giving it a continued support, and keeping it extended to the proper length. A broad leather strap should also be buckled around the pelvis, including the trochanter major, to press the fractured portions of the bone firmly together; and the best position of the limb is to keep it in a straight line with the body."

Mr. Lisson's plan, applicable to all cases, as detailed in his own language, is as follows:—"Whether the fracture is suspected to be within or without the joint, either entirely or partially, the broken surfaces are to be brought in contact and retained immovably in apposition for a time sufficient to admit of union. The limb is put up in apparatus not requiring removal, and but little adjustment. This can be effected only in the extended position. Many splints with foot-boards, straps, and screws, are intended for this purpose, some to be attached to the in-



jured limb, others to the sound one; but the apparatus which is most simple, easily to be prepared at all times and in all circumstances, is at once the best and most efficient. This is a straight wooden board, not so thick as to feel cumbersome, and not so thin as to be pliable or easily broken; in breadth, corresponding to the dimensions of the limb; in length, sufficient to extend from two, three, or four inches beyond the head, to near the ankle; deeply notched at two places at its lower end, and perforated by two holes at the upper. The splint, well padded, is applied to the extended limb, the ankle being protected by proper adjustment of the pads. The apparatus is retained by bandaging, fig. 268, a circumferential is applied round the limb, from the toes to near the knee, so as to prevent inflammation, which would otherwise follow

FIG. 268.



ADJUSTMENT OF FRACTURED BONE OF THE FEMUR.

pressure shown by the rest of the apparatus. The splint is then attached to the rest of the limb by inserting bolts in a roller from the foot to above the knee: and, in doing this, the bandage, after having been turned round the ankle, should be passed through the notches, so as to be firmly attached to the end of the splint, thereby preventing the foot from shifting. A broad bandage is applied round the pelvis, over the groin and down the thigh, investing all that part of the limb left uncovered by the previous bandaging. A broad band, like a riding-belt, is fastened round the pelvis, so as to bind the splint to the trunk, and thereby keep the broken surfaces of the bone in contact. A large handkerchief or shawl is brought under the perineum, and its ends secured through the openings at the top of the board. It is evident that the splint, being thus securely fixed, and made as part of the limb, tightening of the perineal band will extend the member and preserve it of its proper length. By care and attention in applying the apparatus, and in adjusting the padlocks about the ankle and perineum, there is little or no risk of the skin giving way. The bandages will require to be repeated once or twice during the cure, and the perineal band should be tightened frequently. The apparatus is retained for six or eight weeks, the time necessary for union varying according to circumstances. After its removal, great care must be taken at first in moving the

limb and pressing weight upon it; it should be maintained in its former position very gradually."

Another convenient mode of fixing the thigh bone, is the concave double-inclined splint, recommended by Dr. Busch, with the foot-band added by Dr. Hill, fig. 209. The manner of using it must be obvious at a glance.

FIG. 209.



DOUBLE-INCLINED CONCAVE SPLINT.

The oblique fracture of the *truncatus major* is managed precisely like the preceding case.

When the shaft is fractured, the most important point in surgery is to prevent the shortening of the limb. The patient is placed in a sitting position, by which the psoas and iliacus muscles are relaxed, and the ends of the bones approximated. Extension is then made until the two limbs correspond; the roller is next applied, from the toes to the hip; three splints are then placed over the first bandage; one in front from the patella to the pubis; one from external condyle to the trochanter major; and one from the internal condyle to the peroneus. Dr. Hill—I think judiciously, too—recommends a fourth splint of great gun-shell or shell to be applied on the inferior surface, from the tuberosity of the ischium to the hollow of the knee, wide enough to cover one third of the thigh, and perfectly adapted to the surface. All the splints are to be firmly fastened with a roller, when the limb should be placed on the inclined splint, or supported by some similar apparatus. Three separate rollers are commonly employed; the first is so applied about the knee as to insure its being bent. The patient should not be down for ten or twelve days, as that posture is exceedingly liable to displace the broken bones.

When one or both condyles are fractured, the limb is to be supported so that the head of the femur will press upon the condyles, and secured with rollers and splints.

**FRACTURE OF THE PATELLA.**—This bone is generally broken transversely; the upper fragment is drawn up by the rectus femoris;

the patient cannot straighten the limb; and the space between the broken portions can be seen and felt, fig. 370.

**Treatment.**—The usual method of adjustment is to secure the limb in a perfectly straight position by a stiff splint extending down the back of the thigh to the calf of the leg, around which a roller is applied. The divided parts may be brought together by straps buckled around the limb above and below them, and drawn together by other straps attached to them, which pull the circular down up and down until coaptation is complete. When the broken parts are not accurately adjusted, the union will be ligamentous instead of osseous.

When fractured longitudinally, the leg is to be extended, the parts brought together, and secured by bandage, compression, and plaster-board splints.



FRACTURED PATELLA.

FIG. 371.

**FRACTURES OF THE TIBIA AND FIBULA.**—These accidents are readily detected by the deformity, pain, crepitus, &c.

**Treatment.**—When the head of the tibia is fractured, the management is the same as for fractured condyles of the femur. What is commonly termed a "broken leg," is a fracture of one or both bones between the knee and ankle. The double-inclined splint aquilatus, or some similar contrivance, is here necessary. The application of the roller, fig. 371, which is the first part of the dressing, need not begin at the toes, as in the case of ulcers, nor be so firmly bound. This bandage is applied before the bones are fully adjusted, and not so tight as to prevent farther extension. In all fractures the great tie is to be kept in a line with the outer edge of the patella. In oblique fractures, after the provisional application of the roller, the limb should be placed on the inclined splint, and extended until the two bones engage exactly; the foot is then to be



THE ROLLER

band to the foot, bound by straps that will not stretch; and after the adjustment of the bones is completed, two or three splints are to be applied and bound with a roller, which is also to extend around the ankle by supporting splints. Any ingenious mechanic can make a machine in an hour or two which will serve as an inclined plane, and answer as a substitute for the double convex splints before mentioned.

**FRACTURES ABOUT THE ANKLE.**—By twisting the foot outward, the *tibia* is sometimes broken about three inches above the ankle, accompanied with partial or complete dislocation of the *ankle*, fig. 272. The *internal malleolus*, by projecting, forms a spur, and when the foot is turned, crepitation can be felt just above the *external malleolus*.

Fig. 272.



FRACTURE OF THE TIBIA.



FRACTURED TIBIA.

The *tibia* is sometimes fractured near its lower end; it may be transverse, extending through the *ankle*; but is generally oblique with the *internal malleolus* also broken, fig. 273. The foot is turned inward, and the crepitation is felt on the inside.

**Treatment.**—In the first variety the dislocation must be reduced before the fracture is adjusted. The fractured parts are to be kept in



place by one split at the back of the leg, another along the tibia, the foot-board, and the usual bandages. In the second variety a split is to be applied on the side of the tibia.

**FRACTURES OF THE FOOT.**—Nearly all of these cases are connected with severe contusions and lacerations. The medical treatment is as important as the surgical. The cold water-drawings and bandages must be employed with a rigor proportioned to the intensity of the inflammation; and the fractured bones kept in their places by pasteboard or shellac splints, compresses, and bandages applied to meet the indications of each case.

*Note.*—There are some circumstances which the practitioner should always bear in mind, although they have not always been specified in treating of particular fractures and dislocations. In the first place, any injury of the knee, and especially those about the wrist, knee, and ankle, as well as complicated cases generally, are liable to severe inflammation. When fractured or dislocated parts are very painful or badly swollen from inflammation, this must be calmed before adjustment or reduction is attempted. In the second place, adjustment or reduction is always greatly facilitated by previously bathing the part in as warm water as can well be borne. Thirdly, in all cases of fracture or dislocations involving the structure of a joint, very gentle or passive motion should be made at the joint as early as is consistent with safety, to prevent ankylosis, or stiff joint. If made too soon, however, there is danger of re-displacement. The time and extent of this motion must be determined by the nature and place of the injury, the age and health of the patient, &c.

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## CHAPTER XI.

### PARTICULAR OPERATIONS.

**TREPANING.**—When performed for a fracture of the skull, a small opening is sufficient; but when the object is to evacuate matter, it should be larger. The requisite instruments are, a large and small trephine, a Hay's saw, an elevator, a scalpel, with the common pocket-case. A flap is made through the scalp in the shape of the letter D, the circular side of which is raised, when loose fragments of bone, if

present, are to be removed. The long moderate of the bone—periosteum—is next to be expanded, or a circular incision made through it by the edge of the instrument. The trophine is to be applied so that the centre-pile will rest on a sound portion of the skull; the instrument is then turned steadily forward and backward, gentle pressure being made upon it at the same time, rotating it frequently, and clearing the teeth with a brush; the groove must also be examined frequently, and the clot and blood removed with a piece of wetted sponge. When the groove is deep enough to admit the instrument, the centre-pile is to be withdrawn; and as soon as any point of the bone is cut through, an attempt should be made to raise the piece of bone within the circle; but if it does not succeed, the sawing should be very evenly continued until the bone is nearly cut through all round, when it may be detached with ease. After purulent matter or extravasated blood is removed, or the depressed portion of bone elevated, the scalp is to be replaced and secured with the wet compress. The trophine should not be applied over a suture, nor over the course of the middle meningeal arteries.

**PARACENTESIS CAPUT.**—The operation of puncturing the head has been resorted to in some cases of external dropsy. One of the indications is the point usually opened; the fluid is drawn off very gradually, so as to avoid fistula. The wound heals readily, but the operation seldom succeeds in effecting a cure.

**PARACENTESIS OCULI.**—Tapping the eye to let out the humor is among the regular resources of surgery, when the inflammation is so intense that the "ordinary means" fail; but as the hydropath has simple and extraordinary means to subdue inflammation, he will have no occasion to "operate" in this way.

In dropped affections of the eye, attended with a gradual and permanent enlargement of the globe, protruding eyeball, and excessive pain, the eye may be properly punctured. A common lancet, or corneal needle, may be introduced behind the junction of the cornea with the sclerotic coat, into the posterior chamber. Some surgeons puncture the anterior chamber through the cornea.

**FISTULA LACRYMALARUM.**—A small, sharp-pointed bistoury, or cataract knife, is held perpendicularly to the eyelashes, the point directed to the lower margin of the internal tendon of the eyelid, which may be seen on drawing the lid outward, the patient sitting erect, and the surgeon standing behind. The point of the instrument is passed di-

rectly downward, fig. 274, until it enters the sac, which will be denoted by a flow of tears and mucus. The opening should be slightly enlarged outwardly as the knife is withdrawn. A probe, curved a little forward and inward, is then introduced, and, if necessary, pushed through into the nostril, where a tube, style, or tent is inserted.

**ENTROPION AND ECTROPION.**—The internal lid can often be restored by suturing the outside of the lid, or by incising the mucous membrane. Entropion is often cured by a removal or division of the tumor.



LACRIMAL PROBE.

**ANCHILOPSALMOS AND STAPHYLOPSALMOS.**—The first of these terms is applied to a growing together of the eyelids, which may be remedied by the use of olive oil, or any bland ointment; and the second, when the lids adhere to the eyeball. They are sometimes 'united apart,' but the operation is not often successful.

**PTOSIS AND LAGOPHTHALMOS.**—The former case—drooping of the eyelids—may generally be remedied in the same way as entropion; and the latter—a shortening of the eyelids—may be treated as ectropion.

**EPILPHATHOPLASTIC AND RHINOPLASTIC.**—It relates to these formidable words, I can only inform the curious reader that the first applies to the formation of new eyelids and eyelashes from the adjacent integument; and the second, to new lids, or parts of lids, from the integument taken from the back of the nose. New eyelids have also been formed of the integument of the temple.

**RHINOPLASTIC.**—This operation, sometimes called *rhinothelium*, consists in the formation of an artificial nose from the integument of the forehead or temple. In this and all similar cases, the particular circumstance of each case must determine the kind of operation required.

**SYNCHYSIS.**—**KERATOPLASTIC.**—This term has been lately applied to an operation for the formation of an artificial pupil. Experience does not justify a success in cases of complete blindness.

**OTOPLASTIC.**—One of Tulliamont's operations for drawing a new ear out of the scalp of the back part of the head is so called.

**CHILLO, AND GENIO-PLASTIC.**—These are with other Tulliamont's operations, entire performed on *prognathia*, to restore lost parts of the lip and chin by taking the integument adjacent.

**CATARACT.**—This is one of the operations for curing blindness caused

Fig. 276.



HARD LENTICULAR CATARACT.

Fig. 277.



SOFT LENTICULAR CATARACT.

Fig. 278.



CAPSULAR CATARACT.

by cataract. The disease consists in an opacity of the crystalline lens, or its capsule, or both. The eye presents very different appearances in different forms of the disease. Fig. 276 represents a *hard* cataract; it has a *radiated* appearance, with an *amber-colored* center and *gray circumferences*. Fig. 277 shows the appearance of the eye when the lens is in a *soft pulpy* or *creamy* state. Lister says, "the darker the color, the harder the cataract."

Opacity in the anterior part of the capsule is usually indicated by a *whitish spot* in the corner of the pupil, with a *dark blue circle* around it; and when the opacity is in the *posterior* portion, it appears *vaseous*, *striated*, and *yellowish*, and at a distance behind the iris, Fig. 277. In the majority of cases, however, the affection is of a *mixed* character.

For a day or two before operating, surgeons usually keep the pupil dilated by the frequent application of some strong narcotic to the eye.



and balls of the eye, as extract of belladonna, stramonium, &c. The head of the patient is steadied by an assistant, who also holds the eye fast with the speculum; the upper lid may also be held by the fingers of the assistant, and the lower lid by the operator, who is obliged to prevent the eye from rolling with one hand, while the other handles the instruments. The usual position of the patient is a low chair, in a well-lighted room, and that of the surgeon, seated on a high chair in front, with a foot-stool to steady his elbow on his knee. The catching needle is introduced through the sclærotic, about two lines from the corner, and a little below the horizontal axis of the eye, and its point carried slightly backward to avoid the iris; when the point of the needle is seen in front of the lens—by looking through the pupil—the capsule is to be detached from the lens with the sharp edges of the needle, and then pushed down out of sight. But if the lens itself, or its posterior capsule, then appear opaque, the edge of the needle is to be moved round its margin to separate the lens from the *tunica hyalinea*, and then the lens pushed down by placing the flat surface of the needle on top of it, fig. 278, below the pupil, and slightly backward into the vitreous humor; or it may be drawn down by thrusting the needle into it. If the lens slides on raising the needle, it is to be held down until it will remain stationary, when the operation is finished and the needle may be withdrawn. The patient should be kept in a dark room, and the eye closed and covered with a cold wet cloth for several weeks, until all danger of inflammation is passed.



**EXTRACTION.**—This is the operation for removing the opaque lens. The upper eyelid is supported by the assistant, or by an assistant instead of a speculum, and the lower one by the fingers of the surgeon. Resting his little finger on the patient's cheek, the point of the corner-hook is passed edge downward through the transparent cornea, a little within its outer margin and above its center, and passing straight across, parallel to the iris, emerges at the opposite margin. The wedge-shaped edge of the hook advances in two directions round the lens, making a semicircular section, fig. 279. On retracting the hook, the lids are instantly closed, the operator giving the assistant a signal for the purpose. In a short time the eye is again opened, the

external flap raised, a needle inserted, and the capsule incised with it. Slight pressure is then made upon the bulb, unless the lens passes out

FIG. 179



EXTRACTION OF CATARACT.

in the opening without. After examining the eye to ascertain if the lens is prolapsed—in which event the eye has to be exposed to a strong light—to raise contraction and retraction, or the iris pushed back—the retina is adjusted, and the eye dressed with the occiput and bandage.

**ABSORPTION, OR SOLUTION.**—This is another and the easiest method of disposing of an opaque lens, but it frequently has to be repeated. It is best adapted, however, to congenital and soft cataracts. Surgeons have an *anterior* and *posterior* operation; but the latter is preferable. The couching needle is introduced as for depression or couching, the capsule broken up, and the lens cut in several directions. If this does not soon effect its absorption, the needle is again introduced, and the lens broken into minute fragments.

**TOOTH DRAWING.**—The *torsary* has long been in use for extracting teeth, especially the back tooth; but *forceps* are becoming more and more in favor in all cases. When the *torsary* is employed, the gum should be cut closely from the neck of the tooth with the point of a sharp penknife, the back of the instrument fastened upon the tooth as low down or near the jaw-bone as possible, and the fulcrum resting on, and not against the side of the jaw. This manner of adjustment will raise the tooth as nearly perpendicular as possible, and to that extent diminish the danger of breaking the jaw-bone. In some cases the neck or fangs of the tooth are firmly adherent to the jaw when a greater or less fracture is inevitable. The severe bleeding which sometimes follows the operation, can be readily checked by washing the mouth with the coldest water, and exposing it freely to the cool open air.

When *forceps* are used, of which several sizes and shapes are manufactured to suit the different teeth, Figs. 284, 285, and 286, the blades are to be pressed firmly down to the jaw, and while the tooth is raised by a steady force, slight lateral motions are to be made to loosen the fangs in the socket. In the extraction of incisor teeth, circular motion

should be made. The corpus may be extracted with the inciser, and the tongue with the molar forceps. In extracting finger or "snags,"

FIG. 30.



MOLAR FORCEPS (BROWN, 1844).

FIG. 31.



COMMON INCISOR FORCEPS.

FIG. 32.



POINTED FORCEPS FOR ELEVATING SACCU.

the jaws are to be completely detached, and the sharp points of the forceps pressed as far down as possible, when the fragment is to be seized, raised, and rotated at the same time.

**PUNCTURE THE STOMACH.**—The introduction of the common stomach-pump requires its special directions; but in emergency, as in cases of poisoning, the stomach can be emptied by introducing the elastic tube of the common injecting syringe, using the syringe itself as the pump. When it is withdrawn, the outer end should be closed, so that whatever liquid it might contain would not run back into the stomach.

**CATHETERISM.**—This term applies to the closing and enlarging of various canals in the body, but is usually understood as pertaining solely to the passage of the catheter through the urethra into the bladder. Either a straight or curved tube can be inserted by any one familiar with the anatomy of the parts.

To introduce the *wife catheter* most conveniently, the patient lies on the back with the shoulders somewhat elevated; the catheter is held at a right angle to the body until its point reaches the arch of the pubes, and then depressed to a level with the thighs, when the point of the instrument will slip over the triangular ligament and enter the bladder. The female catheter is easily introduced, as the thickened edge of the urethra can readily be felt about an inch behind the symphysis pubis, at the upper edge of the vagina.

Common catheters for the urethra are made of silver or gum-elastic. When the latter is introduced, a wire is contained within the tube to prevent its bending on meeting with resistance in its passage.

A catheter is sometimes passed into the Esurachian tube to clean or enlarge it; the orifice of the tube is about a quarter of an inch behind the soft palate, and is large enough for the insertion of the little finger. The instrument is passed through the nostril with its convexity upward, until the patient gags, when, by turning the point further toward the affected side, it will slip into the tube, or the point may be directed into it by the finger introduced through the mouth.

**INOCULATION.**—This operation has thus far been confined to vaccination—the introduction of the *live-pox virus* as a preventive of small-pox. The cuticle is raised with the point of a sharp lancet or needle, and the vaccine lymph, previously matured, rubbed on the abraded surface. Three or four punctures are usually made near each other, on the outside of the arm above the elbow.

But the French surgeons are threatening us with another kind of inoculation, that of *syphilis itself*! It is announced in the late medical journals, that the wonderful discovery has been made that, by repeatedly inoculating the system with this virus until the system is saturated so that it will take no more, the system will thenceforward be proof against any farther action of syphilitic poison. What are "the professors" at Paris or New York intend to make of this "*discovery*," is not stated; and I mention the subject for the especial purpose of repudiating the gross absurdity as well as errant quackery of the whole affair.

**ESOPHAGOTOMY.**—The gullet has sometimes been opened to extract foreign bodies, and to introduce food into the stomach. An incision is made between the trachea and sterno-cleido-mastoid muscle; and the *diaphragm* made closely with the fingers, to avoid the recurrent nerve, the fascia being cut with the protection of a director. The operation may prolong, but seldom saves life.



Clothing is generally produced by some substance lodging just above the cricoid cartilage, from which it is in most cases soon pushed forward toward the mouth, or raised a little, sticking fast in the pharynx, where it may produce suffocation by pressing upon the larynx and exciting spasm of the glottis. By opening wide the mouth, the article can generally be loosened with the finger, a fork, teaspoon, spoon-handle, or carved forecups. If it has passed below much in this way, it may be pushed into the stomach with a prober, a piece of winebottle, having a rounded end, and covered with silk; or withdrawn by means of an air-pump.

**LARYNGOTOMY.**—This operation is sometimes necessary to remove foreign bodies. An incision is made through the skin (near the lower side of the *pomum infanti*) to the lower border of the cricoid cartilage. The skin is then separated, and the cellular membrane captured with the handle of the scalpel, between the sternohyoid muscles down to the crico-thyroid membrane, when the point of the scalpel is passed suddenly through this membrane.

**TRACHEOTOMY.**—The trachea or windpipe is sometimes opened in order to extract foreign substances. The place selected is the median line, extending from just the upper end of the sternum to the cricoid cartilage. It requires a skilful assistant.

**PARACENTESIS ABDOMINIS.**—"Tapping," as this operation is usually called, is performed in *ascitis*, or dropsy of the abdomen; it is justifiable whenever the fluid is contained in a cyst, and when all the usual means for promoting the absorption of the fluid have failed. The patient sits in a chair; a bandage is made of a sheet folded about half a yard wide; this is placed around the abdomen, with a hole in front through which is open, and crossed behind the back, where the ends are held by two assistants, who are to tighten it as the fluid escapes. The surgeon then makes an incision in the lower side, two or three inches below the umbilicus, fig. 252, with a sharp lancet or bistoury, through which a blunt tube or cannula is introduced to carry off the fluid. If salivary occur, the first must be loosened or even discontinued for a time; and if excessive swelling supervene, the patient may be placed in a horizontal position, and the completion of the operation deferred for several hours, or even a day or two. The only dressing required is the adhesive strip and bandage; the patient must keep very quiet for several days, and then resume habits of exercise very gradually.

**PARACENTESIS VENTRIS.**—The bladder may be “tapped” above the

FIG. 30.



PARACENTESIS ABDOMINIS.

front of the pubes, or punctured through the rectum in males, or vagina in females, in obstructions which admit of no other method of relief.

**IMPERFORATE ANUS.**—Children are sometimes born with the integuments closed over the rectum, which can be observed swelling beneath. A single incision will remedy the difficulty. When the rectum cannot be resolved, and in cases of its closure in the adult is consequence of disease, the only remedy is an artificial anus. This is usually made by cutting in the loins to the descending colon, and attaching the bowel by two ligatures to the lips of the wound; an incision is then made into it, and the lips of this wound more closely united with those of the first.

**IMPERFORATE URETHRA.**—When this is a congenital malformation, a round trochar is to be inserted, followed by a canula, and then by a catheter, and this is retained until the orifice heals.

**LITHOTRIPSY AND LITHOTOMY.**—Each of these modes are resorted to for stones in the bladder. The former operation consists in crushing it in the bladder with an instrument called the lithotripter, and is only applicable to adults when the stone is soft and small; and the latter consists in cutting into the bladder with the garget or knife.

The operation of lithotripsy is more frequently applicable to the female, by reason of the larger diameter of the urethra; and for the same reason, even this is very rarely necessary.

For the operation of lithotomy, the urethra must be dilated by bougies until the lithotripter will pass. This instrument, fig. 284, is

Fig. 284.



LITHOTRIPTER INCLUDING A CALCULUS.

then slid and passed into the bladder, wide closed, as a common bougie. When it comes in contact with the stone, the movable half is pushed in, by which the blades are opened at the several joints; it is then rotated from side to side, lightened occasionally, etc., so as to grasp the stone; when fixed between the blades—which fact is known by the inability to draw the sliding part back—the arms of the saw are turned gradually, by which the stone is withdrawn and the blades brought slowly and with great force together. After the stone has given way and the instrument closed, it is to be reopened and managed in the same way for any large fragments which remain. During the operation the patient is placed on a table, with the hips elevated and the bladder full, or nearly so; or it may be filled by injection through the catheter. After the crushing process is completed, the lithotripter is withdrawn, the patient turned face downward, and directed to urinate as rapidly as possible; after which the bladder may be repeatedly injected and the powdered stone washed out.

In cutting for the stone, the lateral operation is now generally preferred, and always adopted by some of the most eminent living surgeons. But as no one will attempt it without special education in the dissecting-room, its description, which is somewhat tedious, need not be detailed here.

**AMPUTATION.**—The Water-Care method of treating injuries, tumours, ulcers, and inflammation is destined to diminish very greatly the

desired for this operation, which, however, is much more simple than is generally supposed, and can be performed by almost any person who combines a good mechanical tact in the use of tools, with a sufficient amount of anatomical knowledge to enable him to expose the main artery.

The operation may be performed with nearly equal advantage in two ways, one of which is called the *circular*, and the other the *flip* operation. The latter, however, is applicable to a greater number of places.

The usual instruments employed, in addition to the pocket-case, are, the tourniquet, large knife, saw, and bone-forceps. For the circular operation, a blunt, round-pointed knife is used; and for the flip operation, two sharp-pointed ones for different parts. Of course, the thorough, practical surgeon is to be preferred in all cases requiring amputation, but emergencies do sometimes exist in which (immediate amputation is the only chance for the patient's life) and to meet this exigency, the following explanations are given.

The patient is seated in a chair, or placed on a bed or table; the pad of the tourniquet is fixed on the artery at a convenient distance above the place of operation. In the circular operation upon the arm, one assistant supports the forearm, and another grasps the arm above with both hands, and pulls back the integument as much as possible. The surgeon passes his hand under the arm, bringing the knife con-

Fig. 250.



CIRCULAR AMPUTATION OF THE ARM.

stitute over it on his own side, with the point downward, *fig. 255*, and makes the first incision by drawing the blade backward from left to



point, cutting through the skin and superficial fascia, entirely round the limb. The skin is then loosened from the muscles beneath, by separating the areolar tissue with a scalpel or bistoury; the skin is next retracted further up, and then another incision made as high up as the skin will allow, dividing all the flesh down to the bone. Some surgeons give an elliptical direction to both incisions, leaving the muscles longer before and behind than at the sides. The muscles are next separated from the bone as high as two with the point of a knife or scalpel, and a strip of muslin, a yard long and three inches wide, made into a "two-tailed retractor" by slitting it to its middle, applied, the broader end being placed on the under side, the two tails passing up on each side of the naked bone, and crossing them at the top; by this the flesh is pulled upward as far as possible, and held by an assistant. The periosteum is then separated from the bone by a circular cut, and then the bone is sawed off, the splints, if any, remain, being smoothed off by the bone-forceps or bippers. The retractor is then removed, and the bunched artery tied. If the artery is not readily found, the tourniquet is loosened, when a jet of blood discovers it. All other arteries which bleed on loosening the tourniquet, are to be also taken up and tied. When the veins cease bleeding, the stump is to be washed clean and dressed by bringing the edges of the flesh together in an exact horizontal line across the middle of the stump, and there fastened by strips of adhesive plaster, three-fourths of an inch wide and eight or ten inches in length, placing the first over the center of the wound, and the others laterally at about a quarter of an inch distance. Other strips may be laid obliquely over these, and narrow strips in any direction necessary to secure every part of the wound firmly; and a strap round the whole arm to secure all the others is also advisable. The stump is then covered with lint, retained by a light, easy bandage; and the dressings are to be kept constantly wet with cold water, if there is the least tendency to inflammation.

When animal membrane is used for tying the arteries, it may be cut off close to the knot and left to itself; but if linen or silk is employed, one end of the ligature must be left long enough to hang out between the strips. The dressing does not usually require removing under several days; and when they are removed or readjusted, the parts must be carefully supported by an assistant; the ligature must be taken away whenever it can be done by a vols pulling; but its removal should not be attempted within one week.

When it is necessary to separate the arm high up, the subclavian artery should be compressed where it passes over the first rib, by the thumb of an assistant.

In the *flap operation for the forearm*, fig. 355 shows the proper position of the arm. The

FIG. 355.



FLAP OPERATION.

through close in front of the bones, and brought obliquely downward, thus making a second flap to correspond with the first. The remainder of the operation and the drawings are similar to those of the former operation.

*Amputation of the fingers*, though occasionally desirable at either joint,

FIG. 357.



AMPUTATION OF THE FINGER.

is most frequently performed at the base—the phalanx-metacarpal articulation, fig. 357. An incision is made open, the lamella is an elliptical form around the finger, extending down upon the palmar surface of the fin-

per about an inch, to make a flap large enough to cover the joint; after which the tendons and ligaments are cut through, and the joint dislocated by carrying the knife through it.

**INCISING AND COMPRESSING ARTERIES.**—These operations will usually be performed by the experienced surgeon; but emergencies will frequently exist in which it is indispensable to cut down upon and tie, or make compression on a large artery, in order to arrest a dangerous flow of blood, or prevent hæmorrhage while removing tumors or other morbid parts. How and where to do these things, ought, therefore, to be matters of general information. In ligating arteries, the main points to be observed are, to make an oblique incision over it, and to avoid taking up the nerve, which is frequently enclosed in the same sheath with the artery. And in compressing arteries, a handkerchief or the thumb may be employed, making the pad or pressure to bear directly on the vessel. When the thumb is employed, the beating of the artery will direct the exact point for the pressure to be made, which is to be increased until the pulsation ceases.

The subclavian artery may be compressed by the thumb, and with difficulty in any other way, where it passes over the first rib, in the space between the first rib and clavicle, thus controlling the circulation of the entire arm. The brachial artery can be easily compressed on the inner side of the arm, about midway between the elbow and axilla, as it lies near the surface. The circulation of the lower limb may be effectually controlled by compressing the *femoral* artery at the groin just above Poirpert's ligament; the pulsation of the artery can be felt immediately below the convexity of the groin; the thumb is here the most effectual instrument for compression, although a piece of cork, or the handle of a shoe-key, wrapped in several folds of linen, will answer.

The *large arteries of the neck* seldom require compression, except when large tumors are to be dissected out. The common *carotids* may be considered as resting on the transverse processes of the cervical vertebrae, and their circulation may be controlled by passing them against these processes.

**NOTE.**—There are a few instruments required in some of the preceding operations which are found at nearly all the manufacturing shops; but an ocular view may enable the operator to have either of them made to order, should it prove necessary or more convenient. Fig. 288 represents the *double hook* employed in the operation for strabismus. Fig. 289 is the *currier or divider* used in the same operation. Fig. 290 is a pair of *flat hook forceps*. Fig. 291 is a pair of *curved*

anterior. Fig. 292 represents the silver tube inserted in cases of laryngeal stridor. Fig. 293 is the style sometimes employed in the treatment of this same disease. Fig. 294 is the ordinary curved crutch-needle, and Fig. 295 is called *Hoy's crutch-needle*. The former needle is sometimes called *Scarpa's*, and is generally preferred.



Fig. 294.



Fig. 297.



## PART VIII.

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### MIDWIFERY.

#### CHAPTER I.

##### HISTORY OF MIDWIFERY.

**ANCIENT MIDWIFERY.**—All history, sacred and profane, attests that the general practice of midwifery has been in the hands of females until a very modern date. It is true Hippocrates describes an obstetrician, but we have no evidence of his possessing any experimental knowledge on the subject. Historians tell us that in Greece, Rome, Persia, Egypt, Arabia, and Chaldea, woman was woman's physician. The Old Testament informs us that female midwifery was an honorable calling among the ancient Hebrews. "Since the beginning of history," says Mrs. C. M. Duff, "the lives of eighty-seven women, eminent not only for obstetrical skill, but capable of extended practice, have been written."

So far as the world has had experience in this matter, the success of female accoucheurs has been at least as great as that of male accoucheurs; and the statistics of all ages show that the attendance of women has been accompanied with fewer accidents and a less number of fatal cases than the practice of men. Since it has been as fashionable as it is foolish to drug and bleed pregnant females occasionally, on the absurd notion that there are a great many natural "diseases of pregnancy," the success of our most eminent professional men-midwives compares rather unfavorably with that of many professional female midwives, who lived in happy ignorance of the whole of the modern drug and bleeding art.

**MODERN MIDWIFERY.**—Save in most parts of Great Britain and the United States, the general practice of midwifery still is in the hands of women. In several European countries, the business is divided between male and female practitioners; but in the greater number of

countries—in earth, civilized and uncivilized, women officiate in all ordinary cases. Throughout Russia, at this day, educated females attend all classes of society, from the royal family to the poorest wretch. The Chinese employ midwives in all ordinary cases, obstetrical surgeons being called upon only when instrumental assistance is necessary. The American Indians, the Otobahians, the New Zealanders, and many other nations and tribes, who employ female midwives or nurses, are celebrated for easy births and exemption from accidents. In France, the  *sage femme*, who means, in the principal accoucher. In Germany, the *cradlewife*, skilful women, officiate. In Denmark her title is *midwifery*, earth-mother. In Sweden and Norway she is called *midwifery*. In Spain and Portugal, the *comadre*—literally, with mother—attends. All of these terms are equivalent to *midwife* in our language.

**FEMALE AUTHORS AND PRACTITIONERS.**—Soon after the institution of the first medical school in Greece, the exclusive spirit of the faculty obtained the enactment of a statute prohibiting the practice of this art by "women and slaves." The tyrannical act spread dismay among the women of Athens; and so triumphantly did they rebel against the carriage upon "women's rights," that a new act was soon after passed allowing free-born women to learn midwifery. No other attempt was made by the profession to wrest this practice from its rightful owners until after the accession of Henry IV.

Among those who have attained eminence in this their peculiar department of the healing art, the following names may be mentioned in this place: Agnodike, the daughter of Hecatephila; she practised successfully at Athens in defiance of the medical clique. Asclepias, the queen who assisted Xerxes in the battle of Salamis. Egeusike, of Greece, daughter of Cimon, and nurse of Alcibiades. Yvettine, of Savoy, who practised in the latter part of the thirteenth century, and wrote several books. Mad. Perrotte, who was introduced into the office of midwife, in Paris, in 1488, and became famous throughout France. Mad. Gauscourt, later in the sixteenth century, became equally celebrated. Mad. Francoise, the midwife of Catherine de Medici, was an approved lecturer on obstetrics near the middle of the sixteenth century. Olympia Murat, born in Ferrara in 1636, wrote the lectures which her husband, a young physician, delivered at Heidelberg. Mad. Perronne had the reputation of compiling all the obstetrical matter which was published in the works of the western French surgeons, James Gallereant. Louise Bouvin Desargens, born in 1593, married a surgeon, was appointed to attend the Queen of France, and

published many valuable works. Mal. La Marthe, born in 1658, was an accomplished literary scholar, as well as extensive obstetrical writer and practitioner. *Justus Dyetrich Siegmundsen*, born in Silesia in 1659, was one of the most accurate anatomists of her day, an extensive practitioner of midwifery, and the author of several obstetrical works. Mal. Breton, in the eighteenth century, invented a plan for the artificial nourishment of babes. Elizabeth Blackwell, born in England in 1712, was the authoress of the first illustrated work on medical botany ever published. Mal. Darcondy, born at Paris in 1712, was the first person who lectured with a *surstake*, which she invented herself. Morandi, born at Bologna in 1716, was among the first to invent and perfect wax preparations. Mademoiselle Biberon, born at Paris in 1733, made still greater improvements in wax figures illustrative of anatomical knowledge.

Sarah Stans, of England, was the authoress of a work published in 1737, called her "Complete Practice." Elizabeth Nisbet, of London, was distinguished for successfully opposing a distinguished physician on one hand, and a notorious quack on the other. In 1769 she wrote a treatise on midwifery, in which she exposed the use of instruments, which the male accoucheurs were becoming too fond of employing; advocated the employment of women, and strongly pronounced against the interference of men. She declared that a curse followed their interference, in evidence of which she adduced the increasing number of difficult and fatal labors. Mal. Reilata, born in 1759, was the author of a work on "Delayed Accouchments." Margaret Stevens was the authoress of the "Domestic Midwife," published in London in 1780. Mal. Levet published a work in Paris in 1781. Mal. Le Chapelin, who officiated in over twenty-two thousand cases at the *Maternité Hospital* in Paris, ranks among the standard authorities on midwifery. Mal. Davis, another standard authoress of several works, attended over twenty thousand cases, and performed nearly all the manual and instrumental operations known to the art as successfully as any male accoucheur has ever done. Mal. Leveaux was the authoress of a work published in 1776. An Irish midwife, named Doodly, performed the Cæsarean operation successfully with a common razor. Mal. Rondet, born in 1800, perfected a tube for the restoration of children born asphyxiated. Mal. Doum was practicing respectably in 1821. Mal. Wittenbach was consulted in relation to diseases by the most experienced physicians.

In the United States the following names occur in this connection: Old Mrs. Wat, who died at Dorchester, Mass., in 1765, aged sixty-four years, claimed to midwife in more than eleven hundred cases. Mrs. Whittemore, who died in Marlboro', Vermont, at the age of

eighty-seven, often traveled through the woods on snow-shoes to attend her patients, and of more than two thousand cases of birth, she never lost a patient. Mrs. Elizabeth Phillips, who was born at Westminster, England, and commenced to act as midwife by the Lord Bishop of London, in 1716, removed to Charlestown, Mass., the following year, where her grave-stone now records the honorable story that she related as successfully bringing into the world above three thousand children. Mrs. James Alexander, who died at Boston in 1845, aged sixty-one years, styled midwifery with Dr. James Hamilton, of Edinburgh, and practiced in this country twenty-five years without losing a patient. Mrs. Stedman, who died at Westfield, Mass., in 1844, at the age of seventy-five, was an extensive and successful practitioner for many years. Similar facts could be greatly multiplied, but I have already enough for my purpose.

**MALE-MIDWIFERY.**—According to the best authorities we can find, male-midwifery, as a regular part of the physician's duties, dates back precisely one hundred and eighty-eight years, and then it originated with a court prostitute of Louis XIV., the Duchess de Villeri, who, under arrangements of the strictest secrecy, solicited to be attended by Julien Clement, an eminent surgeon. Clement was soon after appointed to the new and lucrative office of midwife to the Princess of France. Until that event the ordinary practice was entirely in the hands of female midwives, surgeons being called upon only as surgeons in cases of unusual illness.

In the most uncivilized and unenlightened portions of the globe, a male midwife has never been heard of. A male accoucher was not known among the "Parissians" until this country had been settled more than a century. In 1755, Dr. John Maitland, the first male accoureur in England on this subject, wrote a book against the abuse of instruments, which the male accouchers were becoming too fond of employing. In fact, at that time the use of instruments was considered such an improvement on nature that, in the language of Dr. Gregory (*Midwifery Exposed*), "Almost every doctor, old or young, was for trying his hand at it." So notorious, indeed, was the rage for instrumental operations, that Steno, in 1757, introduced it in "The Life and Times of Tristram Shandy, Gent."

Dr. Shippen, of Philadelphia, was the first lecturer on midwifery in the United States—1793. Dr. Amosd, of this city, in the same year, was the first to advertise himself as a male-midwife. And no longer ago than 1830, a Boston physician published and circulated a pamphlet advocating the exclusion of females from the practice, and the appoint-



tion of males. At the present time, nearly every allopathic medical journal in the world is valiantly opposed to relinquishing this practice into the hands of females, while every progressive and reform periodical I am acquainted with unflinchingly advocates the reformation.

WROUGHTER IN MIDWINTER!—I confess to be of that number who advocate a reformation of the practice of midwifery to educated females; but I am very far from desiring to see it taken from the hands of educated physicians and entrusted to ignorant nurses. I hold, however, that all females should be sufficiently intelligent on this subject to manage an ordinary labor, and certainly the education required for this purpose is exceedingly simple—so much so that the majority of females could and would acquire it without any teacher whatever, if they were entirely left to themselves, and thereby compelled to become self-instructed. It is very true, moreover, that the multitudinous disorders and deformities raising in artificial society, do now, and will for a long time to come, render surgical assistance necessary in certain cases; and for this purpose the practical surgeon-scoutcher should be retained for accidents, complications, and emergencies. His services would be rarely called in requisition if we had properly educated females to take the entire management of the ordinary practice; and surely no one will pretend that young men can be taught the simple yet delicate duties of a companion and attendant during childbirth, more readily than young women can, or be more efficient in the discharge of the responsible duties devolving. The reason young women are not so educated, or are but imperfectly educated, is because the immense influence of an interested profession is arrayed against them.

## CHAPTER II.

### REPRODUCTION.

THEORIES OF REPRODUCTION.—No subject has engaged a greater share of the attention of philosophers and physiologists in all ages of the world than the mysterious function by which the great command, "increase and multiply," is fulfilled. All the theories which ingenious minds have fabricated may be resolved into three, and perhaps two; although no less than two hundred and sixty-three modifications of these theories have been proposed. Without wasting any time upon these

fœtal operations, it is enough for all practical purposes, to understand that sexual intercourse is necessary to the propagation of our race; and that the female furnishes the *ovum* or germ of the future being, while the male communicates the *seminal principle*. Both, however, equally concur in supplying the *sexual elements* of its organization originally; but the mother has the greater *modifying power* over the development of those elements, on account of the constantly eveninging of the circulating fluids of mother and child until birth, and the nourishment of the child being derived *directly* from the mother during the period of early infancy.

**TRANSMISSION OF ORGANIZATION.**—Nothing is better established than the fact that the character and quality of the organization of the child are dependent on that of both parents; and this fact is of immense importance in its bearings on the well-being of the family of mankind. Though the principle is pretty well understood in the management of cattle and in improving the breed of horses, it is very generally overlooked in theory or disregarded in practice as relates to the human being; and it is to us a matter of astonishment that the standard works on physiology and obstetrics in our medical schools never elucidate the subject, and seldom allude to it. But surely all who contemplate the matrimonial relation, as well as all who are already in that relation, ought to know that precisely according to the development, purity, and vigour—in a word, *texture*—of their own body and sexual constitution, will be the physiological integrity and sexual character of their offspring. It should be universally known, too, that the passion which impels to procreation, lying at the very foundation of existence, is of necessity one of the most powerful of the propensities; and that, while its rational and legitimate exercise is conducive to health, moral purity, and intellectual vigour, its excessive indulgence or abuse is as conducive to physiological exhaustion and moral degradation.

It is the common consent of the medical world that libertines, drunkards, and gluttons, cannot have healthy children; but we ought to be able to trace the sources of infirmity beyond their grosser manifestations. Neither the father whose nerves are shattered by tobacco, whose digestion is disordered by improper food, whose constitution is impaired by drug medicines, or whose blood is often inflammatory with the violence of ungoverned passion; nor the mother whose muscular system is enfeebled, whose nerves are debilitated, or whose abdominal organs are contracted and rigid, and whose brain is constantly irritated by tobacco, wine, smoking, constipated food, strong coffee, green tea, or the frequent indulgence of the passionate or frail mind,

can do justice to the rising generation. If in any of these ways they "eat sour grapes," the children's teeth will certainly be "set on edge." In this way, too, in the sin of the fathers and mothers come their own offspring through many generations.

The influence of excessive food and absolute indulgence alike dispose to a vitiated organization; and we see the lamentable evidences equally among the wretched Indians who toil incessantly for less than a sufficiency of food and raiment, and the prodigal heirs of a more luxurious but scarcely better fortune. Nature never intended that constant labor should agree with the constitution of a part of mankind, and constant idleness or dissipation be compatible with the rest. Those whose muscles are perpetually worked down to the point of absolute exhaustion, require all the rest and sleep they can get to replenish the muscular system; and the brain being but little exercised, will naturally degenerate, and they will propagate a race comparatively stolid. Those who exert the brain incessantly, and suffer the bodily functions to decline, will subject their offspring to feeble constitutions and unbalanced minds; and those whose life is a dull round of indolent repose, or dissipation, will vitiate the bodily and mental qualities of progeny, vulgarly, dissolutely, and selfishly.

A very common source of debility on the part of parents, and hence imperfect organization on the part of offspring, is the abuse of coarseness. No fair delicacy can excuse those who assume to be sociable, for refusing to speak plainly on a matter which so much concerns human health and happiness; and I cannot better acquit myself in this duty than by making the following quotation from a recent work (*Organic Letters*), by J. Bradford Sax:

"The various organs and faculties of the parents are transmitted to the child with all their peculiarities and conditions. The perfection with which they are transmitted depends upon their degree of activity at the time of parturition; the more active they are at the time the more perfectly will they be inherited. Hence, in order to secure perfect offspring, it was provided that during the act of parturition all the organs and faculties of the body and mind in both parents, but especially in the father, should be dissipated to the highest possible degree of activity. Of course a corresponding reaction must afterward take place.

"Now it is impossible that such violent or intense vital stimulations and reactions should occur without an excessive expenditure of nervous or vital energy on the part of life. In point of fact, no act or function is so exhausting to the whole system as this. If indulged in to excess, no practice can possibly be so debilitating, degenerating, and de-

structure to all the organs and faculties. Probably none of the nervous fluid or influence is expended in a single sexual crisis than would suffice to carry on all the ordinary vital operations, perhaps for days. If it is indulged in daily, or even weekly, the debilitated subject need not hope for health or happiness."

In a recent and very excellent work (*Popular Education*) by Ira Mayhew, A.M., late Superintendent of Public Instruction in Melrose, the author remarks: "Physiologists in general coincide in the belief that a vigorous and healthy physical and mental constitution in the parents communicates existence in the most perfect state to their offspring; while impaired constitutions, from whatever cause, are transmitted to posterity. In this sense, all who are competent to judge are agreed that the Giver of life is a jealous God, visiting the iniquity of the fathers upon the children unto the third and fourth generation of them that hate Him or violate His laws. Strictly speaking, it is not disease which is transmitted, but organs of such imperfect structure that they are unable to perform their functions properly, and so weak as to be easily put into a morbid state or abnormal condition by causes unimpaired organs are unable to resist."

**THE MARRIAGEABLE AGE.**—Anglo-statistical data have settled the question that the first children of those who marry very young are more animal and less moral and intellectual than those born nearer the middle period of the life of the parents. Extensive observation has also established the position, that the great majority of vices and crimes, morally and intellectually serious, have been among the younger children of the family. The elevation and improvement of the race, therefore, seems to be adversely affected by early marriages. The sanest physiologists and gynecologists regard twenty-two to twenty-five for the female, and twenty-five to thirty for the male, as the most appropriate ages for assuming the serious duties as well as participating in the pleasures of matrimonial life.

**PHYSIOLOGICAL LAW OF MARRIAGE.**—Physiologists are divided on the question, whether organizations similar or unlike are most conducive to vigorous offspring. Physiologists generally maintain that temperaments decidedly different, provided these differences are not extreme, make the most fortunate alliances for the offspring; and the same principle is held in relation to the mental organs. This proposition is strongly corroborated by the favorable results of cross-breeding in the lower animals, and even from the cross-matings of the people of different nations, so far as observations have been recorded. I ap



profound, however, that this law, if it be a law, derives its principal importance from the enormous habits and customs of society. People who "live, move, and have their being" under one dull, monotonous routine of surrounding circumstances, will become mentally stupid, and physiologically indolent and nervous, for want of variable external circumstances to call out the mind and exercise the body; and here cross-breeding, or the union of different temperaments, tastes, habits, fashions, and differently-developed families, will tend to excite and cultivate the powers of both parties. But when both parties are healthfully developed in body and mind, actively yet not dreadfully engaged in some occupation which gives free scope to all the faculties and faculties, the voluntary habits being at the same time physiologically correct, there is not, certainly, an equal reason, if, indeed, there is any, to seek for might save the most congenial temper.

### CHAPTER III.

#### PHYSIOLOGY OF THE FETUS.

**FETAL DEVELOPMENT.**—About two weeks after impregnation, the new organization becomes about as large as a pea, and its two envelopes, or membranes covering, called chorion and amnion, with a gelatinous substance inclosed between them, are distinctly visible. A thin membrane is also formed over the whole internal surface of the chorion, called the decidua. Soon after a small white thread-like substance appears, which is the commencement of the brain and spinal marrow; before the twentieth day the eyes are visible; and before the first month is completed a cartilaginous or gruly substance indicates the future bones.

In the second month the cartilage begins to harden into bone, the rudiments of the teeth are visible, the general form is developed, and it is about as inch in length. During the third month the heart is developed, and, although without blood, has a slight degree of motion. At the end of three months, the eyelids are distinct, the eye perfect, the fingers and toes apparent, the heart beats freely, and all parts are well defined, the weight being two or three ounces, and the length four or five inches. In the fourth month the muscles become distinct, the brain and spinal marrow firmer, the skin now covered with integument; a large portion of the bony structure is ossified, the rudiments

of the second set of teeth are seen under the first, and the skeleton called *mesocranium*, begins to collect in the bones.

Near the middle of the fourth month, the uterus rises above the pelvis into the cavity of the abdomen, when the mother becomes remarkably sensible of the motions of the fetus. This period has been called *quickening*, upon the erroneous supposition that the fetus then first becomes endowed with life; but it is truly alive from the moment of conception. Nausea in the stomach, tendency to faintness, &c., denote the disturbance occasioned by this sudden change of position.

From four to nine months the general development is more rapid. In the fifth month the situation of the male can be discerned, the

FIG. 205.



FETAL CIRCULATION

weight is about one pound, and the length about nine inches. In the sixth month the head becomes convex, and the nails marked; the weight increases to one and a half or two pounds, and the length to twelve inches. During the seventh month the hair is perfected, the nails fully formed, the bones are comparatively firm, the *mesocranium* collects lower down in the large hemispheres; weight about three pounds; length about fourteen inches. Many children are capable of being raised if prematurely born at this period, and even in some cases if born a month or two earlier. During the eighth and ninth months, no new phenomena present, but every part acquires a firmer consistence, and all the functions become more active.

**FETAL CIRCULATION.**—Until quite recently the opinion prevailed that the blood of the mother circulated directly through the vessels of the fetus; but it is now known that the fetus has a set of independent existence, although

its nutrient materials are of course derived from the mother. The mother secretes the substances of nutrition, which, by coming in contact with the fetus, are absorbed; and, after being modified in their passage through the placenta, are degraded and assimilated. Fig. 295 is a representation of the fetal circulation.

1. The umbilical cord, consisting of the umbilical vein and two umbilical arteries; proceeding from the placenta (2). 2. Umbilicus, dividing into three branches: two (3, 4), to be distributed to the liver, and one (5), the inferior vena cava, which carries the impure materials (6). 7. Portal vein, conveying the blood from the intestines, and entering with the right hepatic branch. 8. Right auricle; the course of the blood is directed by the septum, proceeding from 9 to 10 the left auricle. 11. Left ventricle, the blood following the arrow to the arch of the aorta (12), to be distributed through the branches given off by the arch to the head and upper extremities. The arteries, 13 and 14, represent the course of the blood from the head and upper extremities through the superior and inferior vena cava, to the superior vena cava (14), to the right auricle (15), and in the course of the arrow through the right ventricle (16), to the pulmonary artery (17). 18. Truncus arteriosus, which appears to be a proper continuation of the pulmonary artery: the vessels at each side are the right and left pulmonary artery cut off; these are of extremely small size as compared with the ductus arteriosus. The ductus arteriosus joins the descending aorta (19, 20), which divides into the common iliac, and these into the inferior iliac, which become the hypogastric arteries (21), and returns the blood along the umbilical cord to the placenta; while the other divisions, the external iliac (22), are continuous with the lower extremities. The arrows at the terminations of these vessels mark the course of the venous blood by the veins to the inferior vena.

The pure blood is brought from the placenta by the umbilical vein; this vein passes through the umbilicus, and enters the liver, where it divides into several branches, two or three of which are distributed to the left lobe of the liver; one branch communicates with the portal vein, as the transverse fissure, supplying the right lobe; and a large branch, the ductus venosus, which, passing backward, joins the inferior vena. In the inferior vena the pure blood is mixed with that which is returning from the abdominal viscera and lower extremities, and is carried along through the right auricle, guided by the Eustachian valve, and through the foramen ovale, into the left auricle. From the left auricle it passes into the left ventricle, thence into the aorta, and, by means of the curved and valvular arteries, is distributed to the head and upper extremities. The impure blood is returned from the head and upper extremities by the superior vena cava to the right auricle; from this it is propelled into the right ventricle, and thence into the pulmonary artery. As the lungs are solid and inoperative, only a small quantity can pass into them, and hence the greater portion passes through the ductus arteriosus into the continuation of the descending aorta, where it is mingled with that portion of the pure blood which is not sent through the curved and valvular arteries. Passing along the aorta, a small quantity of this mixed blood is distributed by the external iliac arteries to the lower extremities; the greater part is con-

veyed by the internal iliac, hypogastric, and umbilical arteries to the placenta; the hypogastric arteries proceeding from the internal iliac, and passing by the side of the bladder of the Mother; and upward along the anterior wall of the abdomen to the umbilicus, where they become the umbilical arteries.

"From a careful consideration of this circulation," says Dr. Wilson (*Human Anatomy*), "we perceive, 1st. That the pure blood from the placenta is distributed in considerable quantities to the liver before entering the general circulation. Hence arises the abundant nutrition of that organ, and its enormous size in comparison with other viscera.

"2dly. That the right auricle is the scene of meeting of a double current, the one coming from the inferior vena, the other from the superior, and that they meet cross each other in their respective courses. How this crossing is effected, the theorist will wonder; not so the practical assistant; for a surgical examination of the fetal heart will show. 1. That the direction of entrance of the two vessels is so opposite, that they may discharge their currents through the same cavity without adventure. 2. That the inferior vena opens almost directly into the left auricle. 3. That by the aid of the Eustachian valve, the current in the inferior vena will be almost entirely excluded from the right ventricle.

"3dly. That the blood which circulates through the arch of the aorta comes directly from the placenta; and, although mixed with the impure blood of the inferior vena, yet is propelled in so great abundance to the head and upper extremities, as to provide for the increased nutrition of those important parts, and prepare them, by their greater size and development, for the functions which they are required to perform at the instant of birth.

"4thly. That the blood circulating in the descending aorta is very impure, being obtained principally from the returning current in the superior vena, a small quantity only being derived from the left ventricle. Yet it is from this impure blood that the nutrition of the lower extremities is provided. Hence we are not surprised at their insignificant development at birth; while we admire the providence of nature that directs the nutrient current, in abundance, to the organs of sense, prehension, and deglutition: organs so necessary, even at the instant of birth, to the safety and welfare of the creature."

The foramen ovale becomes gradually closed by a membranous layer which separates the two auricles. As soon as the lungs are inflated by inspiration, the blood of the pulmonary artery rushes through its right and left branches into the lungs, to be returned by the pulmonary veins to the left auricle.



**THE THYROID GLAND.**—This structure is situated on each side of the trachea in the neck, resting against the pericardium, and extending from the fourth rib upward to the thyroid gland. It becomes perceptible between the second and third months of embryonic existence, and continues to increase in size until the seventh month; during the ninth month it suddenly enlarges again, weighing then nearly an ounce. After birth it enlarges during the first year, and then gradually diminishes, almost disappearing at puberty. It is composed of numerous lobules, containing secretory cells, and its office appears to be to prepare nutrient material until the digestive function is fully developed.

**THE PLACENTA.**—This is a spongy, vascular mass, found at the surface of the chorion, and adherent to the uterus, which exists in some form in all mammals.

It possesses little or no sensibility, hence it has little or no nervous structure. It is to the fetus what the lungs are to the adult, serving for the absorption of the blood of the mother until respiration brings the blood in contact with atmospheric air in the lungs. Fig. 257 represents the placenta with the umbilical cord attached. The diameter of the placenta is usually about six inches, and its thickness an inch and a half.



PLACENTA AND CORD

Physiologists do not agree whether the vessels of the placenta terminate in or communicate with those on the uterus; or whether, in its uterine portions, there are intermediate coils in which the arteries terminate, and from which the veins commence. Nor do they agree whether any portion of the blood of the fetus actually circulates through the heart, lungs, etc., of the mother. From all the investigations which have been made, my own conclusion is, that the placenta serves, in part, to purify the blood; and that the blood of both mother and fetus mingles, to some extent, in the placenta, in consequence of the placental vessels extending into the uterine sinuses; and that, further, while the blood of mother and fetus wet and vent upon each other in the substance of the placenta, is a process analogous to the action between water and blood, in the branchial vessels of aquatic

animals, some portion of the blood of the foetus does actually go the round of the mother's circulation.

**THE UMBILICAL CORD.**—The *fetus, cord, or connecting form* the connection between the placenta and child. It is composed of two arteries and a vein, and, like the placenta, is incompressible. The arteries wind spirally around the vein from right to left, forming in their course a number of loops or knots. The length of the cord varies greatly; its average is eighteen or twenty inches. The pulsation of the cord, which is usually strong and distinct, ceases in ten, fifteen, or twenty minutes after birth, and the portion attached to the child shrinks and falls off in five or six days.

**THE LOQUIOR AMNI.**—This term is applied to the fluid which collects in the cavity of the amnion; it is secreted by the internal surface of this membrane, and its quantity varies from a pint to several quarts; the average is from one to two pounds. It serves as nutriment to the foetus; it allows it free motion; it diminishes the force of blows, shocks, and sudden movements, and also assists in dilating the os uteri during labor.

## CHAPTER IV.

### OSTEOTRICAL ANATOMY.

**BONES OF THE PELVIS.**—The *most immovable* form the pelvis laterally and in front, each of which is divided into the ischium, or sitting-bone; ilium, or hip or haunch-bone; and pubis, or share-bone, as heretofore explained; and the sacrum and coccyx behind. The *basin of the pelvis* is defined by the ilio-psoas line. All below this line is called the *true or lower pelvis*; while the *false or upper pelvis*, which is really the lower part of the abdominal cavity, is immediately above. The *basin of the pelvis* is of an oval form, except where it is broken by the projecting part, or promontory, of the sacrum posteriorly.

**CAVITY OF THE PELVIS.**—This is bounded by the sacrum behind, the ischia laterally, and the pubis in front. It is of unequal depth, measuring five to six inches posteriorly, three inches and three fourths from the basin to the *pubic arch*, and three to four and a

half anteriorly at the symphysis pubis. The bones of the pelvic cavity are smooth on their inner surface, and present a series of inclined plates, leaning at first downward and slightly backward, then downward and forward. The brim or upper margin of the cavity, which is its narrowest part, is called the *superior strait*; and the lower or outlet, the *inferior strait*. This outlet is of an oval shape, but irregular; its lateral boundaries are immovable, but its antero-posterior diameter can be extended on account of the mobility of the coccyx.

**DIAMETERS OF THE PELVIS.**—The three principal diameters are

Fig. 28.



DIAMETERS OF THE PELVIS.

represented by the lines in fig. 28. They are the antero-posterior (1), from the prominence of the sacrum to the inner and upper edge of the symphysis pubis; the transverse (2), across the widest part of the brim, at right angles to the antero-posterior; and the oblique (3), from the sacro-spinous junction of one side to the opposite side of the brim, just above the acetabulum. The average measurements of these diameters are: antero-posterior, four inches; transverse, five inches; and oblique, four and three fourths. Half as well either way may be added for variations. The circumference varies from thirteen to fifteen inches.

The only practical importance of these measurements is in cases of deformities, diseases, or mal-presentations. In ordinary cases nature will accomplish her work just as well without our knowledge of obstetrical anatomy as with it.

**DEFORMITIES OF THE PELVIS.**—The bones of the pelvis may be

distorted in a variety of ways, and is an axiom which renders labor tedious and protracted, or entirely impossible. These cases, however, are extremely rare, and it not unfrequently happens that the aggregate

Fig. 200.



TRANSVERSE DISTORTION

of the diameters is not materially affected. Fig. 200 is a representation of one of the most common deformities. The usual causes are rickets in infancy, and scollitis ossium, or softening of the bony structure, in adults. The transverse diameter of the pelvis, or superior strait, is most frequently affected by deformities, so that if the child's head can enter the cavity, the delivery will almost always be accomplished naturally, although the labor may be greatly prolonged.

The extreme distortion is the antero-posterior distortion of the brim

Fig. 201.



ANTERO-POSTERIOR DISTORTION.



of the pelvis, is seen in fig. 369. This is one of the conditions which render natural labor impossible, although slight deformities in this respect are usually overcome by the natural efforts.

## CHAPTER V.

### PREGNANCY.

**Signs of Pregnancy.**—The cessation of menstruation at the usual period of its occurrence is among the first indications, though not in itself conclusive of pregnancy. Most women experience some degree of nausea, and sometimes vomiting or *nausea*, called *morning sickness*; this usually begins in the fifth or sixth week, and continues to the end of the third month. *Melancholia* sometimes, though not often, attends. The breasts manifest an uneasy sensation of fullness about two months after conception; throbbing and tingling pains ensue, and they soon increase in size and firmness, become knotty, and the areola around the nipples darken; these are the most unequivocal of all the signs of pregnancy. The enlargement of the abdomen is gradual from the first, although in some cases it becomes a little flatter for a month or two. Quickening occurs usually during the fourth month, after which the motions of the fetus are decisive.

**Duration of Pregnancy.**—The natural duration of pregnancy has usually been reckoned at nine calendar or ten lunar months, or two hundred and eighty days. A majority, probably, are born in the fortieth week; nearly as many in either the thirty-ninth or forty-first; many births take place in the thirty-eighth, forty-second, and forty-third weeks; and they are not very infrequent in the thirty-seventh, forty-fourth, and forty-fifth weeks. The ordinary period seems therefore to range from two hundred and fifty-two to three hundred and sixteen days. The commencement of pregnancy is generally fixed two weeks subsequent to the last appearance of menstruation; yet this calculation is liable to an error of between two and three weeks.

**Extra-Uterine Pregnancy.**—In some extraordinary instances, the precise causes of which we can never understand, the ovum is impregnated, and remains in the ovary, fallopian tube, or the inter-

space is the walls of the uterus. In all these cases the general signs of pregnancy are more or less apparent, while the enlargement of the abdomen is confined to one side, and develops very much like an ordinary tumor, with a sense of weight, tension, heat, and pain. Sooner or later the cyst which incloses the fetal mass ruptures, the child dies, and the surrounding parts either assimilate themselves to their peculiar circumstances as well as may be, and allow the organic remains to occupy this part for an indefinite period, or make an effort to remove the fetus by the formation of an abscess opening externally, or a discolored comminution in the vagina or rectum, through which the osseous parts of the mass are discharged.

The practitioner must here remind his or her duty to keeping the patient quiet, attending to the general health, especially keeping the stomach and bowels easy, and soothing all local inflammation, always remembering that nature best accomplishes what she undertakes in her own way.

**SUPERFETATION.**—The occurrence of a second conception before the termination of the first, has been regarded as impossible by many authors; yet there are some well-authenticated cases on record. Sometimes both fetuses are fully developed, and the second born several months after the first; in other cases, one fetus is expelled in a half-formed or blighted condition. Practically we are to regard the latter variety as a case of abortion.

**PATHOLOGY OF THE FETUS.**—Nearly all the maladies to which the child is subject may affect the fetus; and when we consider how unhealthfully the majority of females live while in the pregnant state, and how really the organic system, true to the all-pervading law of self-preservation, throws the morbid conditions of the mother upon the new being within, it seems almost wonderful that so great a majority can live until the time for being born arrived. That the fetus does often die in the uterus, and it is sometimes important to ascertain the fact. The signs are: a cessation of its pulsations; flaccidity or filling in of the abdomen; depression of the umbilicus; a cessation of pulsation, and of a dense weight in the abdomen; the breasts suddenly becoming flaccid; to which may be added a loose feeling of the uterine tumor, failing health, unusual constipation, dark streaks round the eyes, facial bronch, frequent chills, &c. Here, as usual, we are in "fruit in nature." As we ascertain that the uterus will expel its contents, and the treatment required is the same, in all essential particulars, as for ordinary abortions.

**HYGIENE MANAGEMENT DURING PREGNANCY.**—Those females who would escape the usual and dangerous maladies which frequently accompany pregnancy, and avoid to a great degree the ordinary pains of childbirth; and, above all, those who would be mothers of healthy children—healthy in body and mind, in constitution and in disposition—must observe attentively and obey invariably a few simple hygienic precepts. 1. All high seasoned, high-salted, and complicated dishes must be abstained from. The whole course of diet must be plain and simple, and coarse enough to keep the bowels always free. Animal food, if used, should not be taken more than once a day. 2. All drugs must be eschewed, especially every thing of the narcotic kind, as opium and its preparations, which have a direct tendency to stupify and enfeeble the future being. 3. Some form of bath must be taken daily; a towel warm will answer, and it need not be very cold; about 70° will do very well; and if the patient is very sensitive or feeble, it may be taken in a warm room. Pregnant women usually bear cold water remarkably well. 4. The hip-bath should be frequently employed, especially near the period of delivery. For a month or two preceding the expected time it should be employed daily; this may not be so cold as to be particularly disagreeable; 60° to 70° is temperature, and for 10 to 15 minutes in time, is a good general rule. 5. The patient must keep on her feet a good part of the time during the whole term. She may walk frequently in the open air, or do house-work, or exercise in any easy manner in the erect attitude. Nothing is more likely to induce a wrong position of the child in the womb, or a painful lingering labor, than pressing and cramping the abdomen by sedentary habits. Females who are compelled to work with the needle, or sitting at a work-table, should be particularly careful at all times to maintain an upright posture. Adhesions of the afterbirth, flooding, tumors, and inflammations of the parts are frequently owing to the compression produced by a disposition of the body. 6. Excessive labor and violent exertions, also strong mental passions, or depressing emotions, are to be avoided as far as possible.

**ACCIDENTS OF PREGNANCY.**—Medical books give us a formidable catalogue of "diseases of pregnancy;" but I think the phrase is another of those misnomers which are so plentiful in the books, and so well calculated to mislead. Diseases *during* pregnancy are common enough; but so far from being *natural* to that condition, they are merely the evidences of the unsuitable habits or circumstances of the individual.

The familiar fact that those diseases which rapidly exhaust the vitality of the body, as consumption, are suspended during pregnancy, is re-

appear with all their formidable and fatal array of symptoms soon after the completion of the reproductive function, sufficiently attests the principle that nature is true to her own purposes, and that all diseases during pregnancy are entirely fortuitous.

Abortion, which is the expulsion of the fetus before the sixth month, and premature labor, its expulsion between the sixth month and maturity, are the most painful disorders or accidents attending pregnancy. The danger is usually in proportion to the hemorrhage. The common causes are general or local debility—inward weakness—violent mental perturbation, and badly shocks or injuries. Leucorrhœa is the cause of the greatest number of miscarriages. Excessive sexual indulgence is also a frequent cause.

The symptoms of miscarriage are, an unusual sense of languor, uneasiness, and weariness, with aching or pain in the back, followed after a few hours or days by a slight discharge of mucus or blood from the vagina, and bearing-down pains; these are at first felt in the back, extending around the loins to the abdomen, and down the thighs, recurring at regular intervals, and increasing in strength and frequency; in most cases the pain is as great as in labor at the full term. In some cases the ovum is expelled with but little pain, and sometimes the fetus is expelled and the membranous shell of the ovum retained for many days, and perhaps finally passed off in a dissolved state with the lochia. Hemorrhage seldom continues after the expulsion of all parts of the ovum, but until then it is to be apprehended. As a general rule, the flooding is less the nearer gestation approaches maturity.

Our first treatment should be preventive; but if the case has progressed too far, the flooding requires our principal attention. Astringents rather deal largely in opium, ergot, sugar of lead, and the forcible extraction of the ovum with instruments, and even bleeding from the arm. These drugs and descriptives are never necessary, but always injurious; in fact, they often injure the constitution much worse than the abortion does.

The patient should repose in an easy, recumbent posture, the wet bandage be applied around the abdomen, and changed several times a day; and two or three vaginal injections of cold water employed daily. When the flooding is extensive, and in cases of internal hemorrhage, denoted by headache, great lassitude, shiverings, frequent and feeble pulse, and the patient becoming pale, exhausted, and faint, with a dark shade under the eyes, the tannin may be employed with advantage, or a silk hemstitch, wet in the coldest water, or enclosing a cylindrical piece of ice or snow, may be introduced into the vagina as far as convenient; it may remain for six or eight hours, and then be in-



introduced again if necessary. Yarrow of the coldest water are also valuable auxiliaries in severe cases. In all cases it is important to have the room well ventilated, and the patient placed on a cool and rather hard bed or mattress. The inexperienced attendant should not be unduly alarmed at the furor which takes place after severe or protracted flooding, for it generally happens that this condition favors the formation of a clot or coagulum, which obstructs the bleeding vessels and effectually arrests the hemorrhage. It is not uncommon for patients to remain an hour or two in a state of delirium *arvens*.

Morning sickness, when very troublesome, is best alleviated by a light, dry evening and morning meal, as Graham crackers, toasted bread, &c.

Flatulence may be relieved by eating very sparingly for a day or two, and careful attention to the bowels.

Cramps, for which the old school practice is, bleeding and leeching, may be quieted by rubbing the lower limbs with a cold wet cloth, followed by dry friction.

Constipation is more apt to occur in the early than the later months of pregnancy. It requires coarser food and water-injections.

Piles, which have previously affected the patient, are liable to reappear or become aggravated. Prosser's ointment should be employed, with a small, cold injection immediately before each stool.

Pruritus, or itching of the genital organs, may be relieved in the same way; if excessive, warm water is more soothing than cold.

Heartburn, sick headache, dyspepsia, and vomiting, are among the unpleasant incidents that are occasionally presented. They are to be treated in the same way as morning sickness. Prosser's oint of cold water are very soothing in most of these cases; and when the sick headache is attended with prolonged nausea and retching, warm water should be drunk freely until the stomach feels easy, or vomiting occurs.

Cravings or longings for improper food should not be gratified. There is vastly more danger of "marking the child," by improper indulgence on the part of the mother, than by proper self-denial. If the mother takes proper care of her general health, and keeps all unhealthy stimuli out of her stomach, the trouble from the cravings will be of little consequence.

Pains in the breasts are sometimes severe. They may always and safely be relieved by cold wet cloths, covered with dry; except when of a gonorrhoic or psoradic character, in which case warm fomentations are appropriate.

Excessive vomiting sometimes occurs, and may be so severe as to be

danger abortion. Fasting, and cold water-drinking, are the special remedies.

Pain in the side—usually the right—often occurs after the middle period of pregnancy; it is usually severe, but generally constant. Bleeding, leeching, cupping, and blistering have been powerfully prescribed for it by "old-school" doctors, but without the slightest benefit in the great majority of cases. The wet bandage and hip-bath are the better remedies.

Difficulty of breathing frequently affects the patient more or less toward the completion of the term; in some cases it is attended with severe cough. Indolence or over-exertion are alike to be regarded in the treatment. Great fatigue of body or mind should be avoided. Lifting heavy articles, running up stairs, walking too far, are among the excesses against which the patient should be cautioned.

When hemorrhage occurs, it is to be regarded as a premonition of abortion, and treated accordingly.

Discharge is among the unusual occurrences. The treatment is, hip-baths, the abdominal bandage, cold injections, and a strict dietary.

Difficult urination sometimes proves very annoying. When it amounts to actual retention, the catheter may have to be employed; this, however, is extremely seldom. Cold hip-baths and bandages are usually sufficient. Foot-baths are also useful; and in severe cases the warm hip-bath, immediately followed by the cold, will often relieve.

Varicose veins, with a swelling and local appearance of the lower extremities, sometimes result from the obstructed circulation occasioned by the pressure of the uterine tissue on the adjacent blood-vessels. Attention to the general health, and a judicious regulation of the amount of exercise—neither too much nor too little—are all the therapeutic indications in this case.

Hysteria is named among the "diseases of pregnancy" by authors. I have never known it to occur in females whose hygienic habits were reasonably correct; and the affection is probably always attributable to novel reading, wearing company or parties, stimulating drinks, irritating food, cathartic and opiate medicines, &c. The treatment is wholly negative—an avoidance of these causes.

Convulsions are less frequent occurrences than hysterical paroxysms, but are produced by the same general causes, and can be prevented or cured by their avoidance or removal.

## CHAPTER VI.

## PARTURITION.

**RATIONAL OF LABOR.**—Many ingenious, if not profound speculations, have been written by medical philosophers, to explain why the fetus and its appendages are expelled from the womb at about the end of ten lunar months, or two hundred and eighty days. As well might they have expended their learning in endeavoring to divine why man arrives at a given stature, and then ceases to grow; or why the earth performs its circuit around the sun in three hundred and sixty-five days, instead of a longer or shorter period. We are sufficiently wise for "our being's end and aim," if we know the fact that it is so. But the physiology of parturition, which it behooves us to understand, is easily explained.

As the ripened foetus drops from its parent stem, so the fetus, when sufficiently developed for independent existence, is separated from its parental connection. A slight discharge of mucus, often more or less tinged with blood, called labor-show, and which serves to lubricate and prepare the parts for the coëpate distension, is the first decisive indication of approaching labor. Wandering pains about the loek, around the abdomen, and down the thighs, gradually becoming fixed and regular, with intervals of perfect ease, denote the preparation going on in the uterine region. Each labor "pain" is preceded by a distinct, periodical contraction of the longitudinal and circular fibres of the uterus, which diminish its diameter and dilate its mouth. These contractions, and consequent pains, are renewed at certain intervals until the distention is sufficient to permit the passage of the child without injury to the soft parts. The pain experienced by the patient bears no very near relation to the force of the contraction of the uterus, but is rather <sup>more</sup> measured by the healthful condition or morbid sensibility of the parts. Those who live healthfully, suffer but little; while many of opposite habits, endure the most excruciating agonies.

In the early stage of labor, the pains are called cutting or grinding; they are of an acute and stinging character, and are occasioned by the stretching of the fibres of the os uteri. In the second stage, the contraction of the uterus is aided by the contraction of the abdominal muscles—some writers say the voluntary efforts of the patient; but this

action takes place whether the patient wills it or not—when the patient is obliged to co-operate with the expulsive effort, by holding her breath, and then the pains are called *forcing*, or *forcing-down*. The forcing or expulsive pains gradually increase in severity, but the patient usually bears them better as the labor approaches its termination. Says Dr. Churchill (*System of Midwifery*): "The amount of suffering depends a good deal upon the temperament of the patient, and upon the habits of life—among savages it appears slight, but it is excessive in civilized life." There is an important lesson implied in the above quotation. Happy will it be for those mothers who can appreciate and apply it.

The remarkable peculiarities of labor pains are, their periodicity; the intervals of perfect ease, during which the patient is often inclined to sleep; each uterine contraction gradually increasing to its maximum of force, and then suddenly subsiding—the intervals of rest diminishing, and the length of the pain increasing as the labor advances. The membranes are sometimes ruptured, and the water of the amnion discharged at the commencement, and sometimes not till very near the conclusion of labor; and still more frequently the water escapes on the first occurrence of the preliminary pains. Sometimes the membrane does not rupture at all, and the child is expelled entirely inclosed—in common parlance, "born with a veil."

THE PAIN OF CHILD-BIRTH.—An erroneous interpretation of Scripture has caused the opinion to prevail extensively in the civilized world, that great suffering is the ordained lot of women in child-birth; and this error has had a paralyzing effect on the popular mind, and caused the sufferers to submit reverently to their fate, instead of seeking the true light of physiology on the subject. If Eve was sentenced to bring forth in sorrow, it was because of her personal transgression. There are a woman on earth who agonizes through the period of parturition, and I will prove her to have transgressed the laws of health in her own person; and, conversely, find one a mother who bears physiologically, and I will show you one with whom the act of child-birth has neither agony nor terror.

The philosophy of this matter is ably expressed in a little work (*The Curse Revoked*), by Dr. T. L. Nichols: "The woman of nature lives so each word as 'enlightenment'—a word so appropriate in illumination. The great truth to be learned by every body is, that gestation and parturition are natural processes. It is as natural for a woman to bring forth children, as for a skunk to produce skunks and fish; and her organs are as naturally adapted for the purpose. In a state of



health, no natural process is painful. Pain is, in all cases, the sign of disease. It has no other use or signification. With a sore throat, it is painful to swallow; with a diseased stomach, digestion is painful; so is childbirth painful to a diseased nervous system, but never to an entirely healthy one.

"It is not credible that any natural function should be attended with pain in a healthy state of the system. All nature protests against the idea—all experience is opposed to it. Causes and effects are too well adapted to each other—ends and means too admirably fitted. This world is the work of infinite power and benevolence; all the human system is the masterpiece of all this fair creation. It is not to be supposed that the most important of all the functions of the most perfect of created beings, of whom we have any knowledge, should be subject to irresistible pain and peril in its performance. Such a belief is an insult to Providence. When God looked upon His creation, and pronounced it good, He could not have overlooked the most important function of His last and most perfect work: and there can be no question that in the original creation of woman, she was fitted to obey the command, 'Increase and multiply, and replenish the earth,' without peril or pain. The very idea of the curse inflicted upon her carries with it the belief, that she was originally created perfect in this particular.

"What, then, has made the change? Why is woman subjected to all her pains, sufferings, dangers, and perils, in the performance of the great function of her life? It is because the forbidden fruit of everyting luxuries and excesses is continually eaten. And just in proportion as woman transgresses the laws of nature, which are the real and unquestionable commands of God, just so far are they subject to the curse.

"Man has it in his power to incur all direct curses by transgression, or to avoid all curses and invoke all blessings by obedience to the divine law. Industry makes of the barren earth another Eden. Temperance and cleanliness give health, and health brings happiness in all the duties of life. So it is with woman. Intemperance, self-indulgence, irregularities, and all the *evils* against the laws which God has written in the structure of our bodies, bring with them the curse of deranged nervous systems, broken health, irregularity of function, disease, pain, and premature death. Every woman is at Eve, and forbidden fruits are all around her. If she listens to the voice of the beguiling serpent, hers is the *curse*. But, on the other hand, faith in God, obedience to His laws, and living in harmony with His will, secure to woman health, and safety, and joy, in following of her destiny. These are

traffic pregnant with meaning, and incontrovertible as the principles of nature."

Mrs. Peabody remarks (*Parent's Guide*): "It is a well-established fact, that women are to be found in almost every country who suffer no pain in childbirth. Now, as a natural law never admits of an exception, this exemption from pain could not occur in any individual, unless it were fully within the capabilities of the race."

Mrs. Gove—now Mrs. Dr. Nichols—testifies (*Lectures to Ladies*): "I know many mothers who, with their husbands, have adopted the 'Galena System,' i.e. in other words, those correct habits recommended in these lectures (that is, attention to diet, exercise, and bathing freely and constantly with pure, cold water), and those mothers have abridged their sufferings in parturition from forty hours to one hour, and have escaped altogether the deadly sickness of the three first months of gestation."

George Combe observes (*Constitution of Man*): "The sufferings of women in childbirth have been cited as evidence that the Creator has not intended the human being, under any circumstances, to expiate all its passions free from pain. But, besides the obvious answer that the objection applies only to one sex, and is therefore not so in too greatly pressed to have its origin in nature, there is good reason to deny the assertion, and to ascribe the sufferings in question to departures from the natural law, in either the structure or the habits of the individuals who experience it."

The late Dr. Andrew Clarke writes: "If women in childbirth could so command, from previous knowledge, that, as a general rule, the danger attending that state is proportioned to the previous sound or unsound condition of the system, and to its good or bad management at the time, and is not the mere effect of chance, they would be much more anxious to find out, and successful in observing, the laws of health, both for their own sakes and for the sake of the future in fact, than they now are, while ignorant of the influence of their own conduct."

Dr. Klier's opinion (*Theory and Practice*) is to the same effect: "The pregnant female, who observes a suitable regimen, will, notwithstanding her period, always enjoy more tranquillity both of mind and body, and incur much less risk of injury to herself and child than she who, giving a free rein to her appetite, indulges in excess, or in the use of improper articles of food."

Dr. Dewees, Professor of Obstetrics in the Medical School of Pennsylvania, has argued (*Treatise on Childbirth*) that "Pain is a marvellous

symptom, the consequence of artificial modes of life and treatment, and can be avoided by appropriate habits and treatment."

In corroboration of this already catchpate weight of authority, I can add, that I have known females in the city of New York adopt a reform system of living—a plain, simple, vegetable diet, with a daily cold bath, and go through the period of gestation without losing an hour from sickness, the onset of parturition with no assistance or specialist in the room save the husband, take the entire charge of the child from the moment of its birth—assisted, of course, by its other parent—and "recover" without experiencing a single symptom of any one of the numerous diseases so common to the lying-in period. This shows that nature can be retained in, as well as departed from, even among civilized people.

I am aware that the easier labors of the less civilized portions of the human family are accounted for by some on the supposition that the children inherit smaller heads. There is something in this circumstance, no doubt; but if the mother lives properly, and the fetus is healthfully nourished, the osseous structure will be as elastic and pliable that the size of the head, though larger among the educated classes, will constitute no serious obstacle to easy delivery.

Among the improper habits which are the sources of the pain and peril of childbirth, improper food, unquestionably, ranks foremost. The immediate causes of the pain are a rigidity and inflexibility of the soft structures on the part of the mother, and advanced ossification of the bones of the cranium on the part of the child. Acting upon this theory, Mr. Rumboldt, of London, instituted an experiment, which was published in 1841 (*Essay on Human Parturition*), for the purpose of securing safe and easy delivery. The experiment succeeded perfectly; and, although I do not explain the cause as others have, the facts are just as interesting. Mr. Rumboldt restricted the patient principally to vegetables and fruits; farinaceous articles, as wheat, barley, beans, peas, rice, and especially fine wheaten flour, being but sparingly employed on account of the phosphates of lime and magnesia they contain. Mr. R.'s idea was, by withholding some portion of the natural food constituents, to de-ossify the system of both mother and child to some extent—to produce an absolute *chlorotic* state—resulting in a more farinaceous diet, after parturition, to supply the requisite elements of bone. The same experiment has been repeated in this country in several cases, and always successfully.

Now I think the whole explanation is furnished by the principle of a more plain, and simple, and less concentrated diet. Such a dietary will always keep the system open and unobstructed, and the extre-

time free, so that the superfluous particles of earthy matter, if any exist in the firmest articles, will be readily washed away. The real objection is urged against firmness of food is, that being highly nutritious, most persons, without a large admixture of fruits and vegetables, are very apt to eat too much. I agree entirely with Mr. R., that the diet is far the most important of any one of the hygienic considerations affecting the security or happiness of the pregnant female, or the health of her offspring.

METOCAYNE LABOR PAIN.—The fashion of giving ergot and other "furring medicines" to expedite delivery, has prevailed to an alarming extent; happily, however, it is now on the decline. But the anæsthetic agents, ether and chloroform, are threatening to have "a run" among ever-changing medical fashions. Among the advantages alleged by Dr. Stearns, who first introduced the employment of ergot in 1807, was "saving to the accoucher a considerable portion of time." Perhaps an hour or two of a doctor's time is more precious than the health of the infant—and perhaps not. "The parts injured by it," says Dr. Stearns, "are positively furring." Again says the doctor, "since I have adopted the use of this article, I have seldom found a case that distended me more than three hours!" Dr. Beck tells us the profession is divided on the question, "Whether the use of ergot has an injurious influence on the child—some maintaining that its common use is the principal cause of the increasing number of still-born children." Now it is perfectly clear, that if it keeps the uterus in rapid and extraordinary "furring" contractions, it must to precisely that extent expose the mother to tearing and laceration of the soft parts, and endanger an injury and fatal compression of the child's head in the passage; and farther than this, if the child is not soon born after its administration, the narcotic properties of the drug—which are known to be potent—may maroon or destroy the child through the medium of the circulation. The only plausible argument which has ever been advanced for its use is, that the strong uterine contractions which it induces, will tend to the prevention of hemorrhage. But when it is considered that there is no danger of hemorrhage under ordinary circumstances, and that, in those extraordinary cases in which it does occur, the surest resource is simple cold water, the argument appears almost foolish. As long ago as 1817 it was noticed by many physicians, and recorded in the *New England Journal of Medicine and Surgery*, "that in a large proportion of cases where ergot was employed, the children did not require for an unusual length of time after birth, and in several cases they were irretrievably dead." "Since then," says Dr. Beck, "a large



amount of testimony has been furnished, corroborative of the truth of this suggestion." Still more pointed and direct evidence is found in the following statistics, collected by Dr. Beck. Dr. Ward, of New Jersey, who used the article extensively, came to the conclusion, that unless the child was expelled in forty minutes after its exit was apparent, it would be born dead. Dr. Howitt gave it in three cases, and the result was three still-born children. The late Dr. William Moore, "a veteran practitioner of obstetrics in this city," testified, "It appears to be injurious to the child at all times, for in every case in which I have seen it exhibited, the child was still-born." Dr. Chastard, of Baltimore, gave it in thirty-seven cases, and fourteen of them were still-born. Dr. Hekewich, of New Jersey, Dr. Davis, of London, Mr. T. Channing, of Birmingham, Mr. Paterson, of Aberdeen—all experienced statisticians, coincide with the previous authors. Dr. Perkins, of this city, testifies: "I have reasons satisfactory in my own mind for believing, that it has frequently destroyed fetuses, and produced sterility in mothers."

Dr. Heatty, of Dublin, states that he has known infants which have been sacrificed by ergot before birth, to have been affected with convulsions afterwards, *terminating in idiocy!*

This is but a small part of the evidence extant, but I trust it is sufficient for a proper understanding of the subject.

Not is the employment of chloroform, ether, or any other anæsthetic agent free from danger. These agents will, it is true, mitigate the suffering from labor pains to a much greater extent than they diminish the contractile power of the uterus. But already the attention of practitioners has been called to the injuriously narcotic effect of these articles on the child. And even in cases where it has not stupified the child, it has produced a narcotic shock upon its nervous system which proved a lasting and incurable injury. If mothers will take proper care of themselves, there will be rarely occasion for such treatment; and if doctors would teach them this lesson, and so avoid the necessity of using those agents, they would confer on suffering humanity a much greater boon than in averaging pain which might have been avoided.

**NATURAL LABOR.**—All takes are usually called natural in which the child is so disposed within the uterus or pelvis that the birth can be accomplished by the efforts of nature; in contradistinction to assisted and complicated labor, which require manual or instrumental assistance. In the most common, and perhaps the only truly natural labor, the head presents at the superior strait, with the occiput in front or backward the symphysis pubis, and the face turned toward the sacrum.

The *prone presentation*—the *face forward*—is rarely attended with any other difficulty than a more tedious delivery. Foot presentations almost always terminate naturally, and the same is true of breech presentations.

**DIAGNOSIS OF PRESENTATIONS.**—The distinctive signs by which different parts of the body can be recognized at once, ought to be familiar not only to all midwives, but to all females who are liable to be called upon to assist in emergencies. The head may be readily known by its hardness and by the sutures and fontanelles; the breast, by its softness, the axilla, or armpits, the scrotum or vulva, and the cleft between the buttocks; the knee, by its rounded form, and by the condyles of the femur; the foot, by its long narrow form, its being at right angles with the leg, the narrow heel, and nearly equal length of the toes; the elbow, by the olecranon process, which renders the joint much sharper than the knee; and the hand, by its shortness, the unequal length of the fingers, and the deviation of the thumb.

**STAGES OF LABOUR.**—The first stage is usually reckoned that period in which the first obstacle to delivery is overcome, which consists in the dilation of the *cervix uteri*. In most cases, a pound of the membranes, filled with liquor amnii, called “the bag of the waters,” is pressed forward of the child’s head, and serves as an aquatic rod to effect the dilation in the easiest possible manner: but when the waters have been prematurely discharged, the child’s head acts as a wedge, in which case there is considerable more suffering. In the second stage the second obstacle, which is the birth of the perineum, is overcome; the head of the child is compressed, and, as it were, moulded into a shape exactly adapted to the passage. When this disposition of the head is attained, it advances with every pain, and exceeds somewhat during their intervals until it arrives at the lower outlet. The obstacles here are the ligaments, muscles, cellular tissue, and perineum, which gradually yield as the head is repeatedly pressed against them, until the dilation is sufficient to permit the head to pass, constituting the *third stage*, and completing the birth. The duration of natural labour varies from a few hours to several days. The average time is about twelve hours. In the fourth and last stage, the placenta is detached and expelled. It may occur in a few minutes after the delivery of the child, or not till a lapse of several hours. Its expulsion is attended by comparatively slight labour pains.

**POSITION DURING LABOUR.**—Since free-midwifery has been a trade,

an immense amount of ridiculous parade and scientific barbarity has become fashionable in parturient societies. It is quite customary to fix and fasten the patient in some awkward position for hours together, surrounded by some half a dozen female helpers, each one having some particular plying, pulling, holding, or lifting duty to perform in the process, while the doctor is fantastically and frightfully dressed, as if about to perform some terrible surgical operation. It is not strange that mothers, with a few child, are so often tormented or alarmed into diseases and accidents. In the cities, labor-chairs are common; but in the country the patient is commonly perched up on four chairs, tied together and covered by bedding, with four attendants supporting the four extremities—the husband bracing behind—the doctor conveniently disposed, and one or two extra attendants making themselves “generally useful” in preparing medicinal slops for the mother in travail, and so for the party, as soon as the travail can be urged to a conclusion. All this is wrong.

The patient should walk, sit, or stand until she feels inclined, by the severity of the pains, or the local disturbance, to rest. She should then recline on a hard bed or mattress. She may assume any position that she feels most comfortable. She may turn the head high or low; lay on the right or left side, or back; or, for a change, rest on the knees, supporting the breast with pillows; or she may change from any one of these positions to either of the others as often as she pleases, and even get up and walk, if the labor is protracted, whenever she feels able and inclined to. There is no necessity for her being confined to a fixed position, and constantly attended upon, by the man or woman-midwife. Nay, such constant attention is invariably injurious.

**MANAGEMENT DURING LABOR.**—So many erroneous notions are current on this subject, that I can scarcely write a paragraph without pointing some professional error or non-professional whim. In a natural labor there is almost nothing to be done, and the principal duty of the physician is to keep the attendants from meddling. After an examination, to ascertain if the presentation is favorable or otherwise, the duty of the midwife and attendants is resolved into keeping the patient in a comfortable position on the bed, supporting her during the pain by making firm pressure with the hand upon the lower part of the back, whenever she desires it—assisting her to change position, and giving her a swallow of water occasionally, which should be the only food, drink, or medicine allowed.

Many abominable customs of “hastening the delivery,” have had their day; and many doctors have acquired great celebrity for “dein-

bring women quickly; but all people ought to be taught that all these things pertain either to rash vengeance or false pretences. It is a custom, and, I believe, universal *dogma* among professional anatomists, that the perineum must be supported by pressing against it externally, while the child's head presses against it internally. I know of no standard author who does not recommend this practice. Professor White, of Buffalo, not long since testified in a court of justice, that the principal use of the physician was to support the perineum during the passage of the child's head. Now, in opposition to all this high authority, I protest against this practice as not merely useless, but actually injurious. And against the *science* urged in favor of the practice, and the affidavit of Dr. White, I suppose the common sense, that the detached part is more likely to be injured or ruptured when pressed between two resisting bodies than when only pressed by one side. The practice I am controverting can only be predicated on the notion that nature has not constructed the parts on correct principles; or has not provided the necessary means to accomplish her own purposes.

Some authors recommend the nurse to press upon the moans externally as the child is being born, with a view of loosening the afterbirth. This, too, had better be let alone. The umbilical cord is sometimes rolled around the child's neck; and, although it can be easily slipped off, it seldom does any harm.

When the head is very strongly pressed in the cavity of the pelvis, the integument of the scalp often forms a white firm, circumscribed swelling; and probably no occurrence so trifling has ever occasioned so many serious alarms and accidents. It has been mistaken for an abscess, tumor, and cut open; and, for a protrusion of some other portion of the body. Sooner, not even the most inexperienced, could make any mistake here if he or she will only employ the thinking faculty, for the *form* of the scalp will in all cases determine its character; and all the treatment it requires is to be left to itself.

As soon as the child is born it will cry loudly, if healthy and vigorous, soon after which the umbilical cord may be tied and cut; but if the child does not cry, or appears apoplectic or feeble, the cord should not be cut until the pulsation in it ceases. Some authors have recommended slapping the child on the back to excite circulation and respiration; but a more merciful and more efficacious practice is to dash a little cold water on its chest, abdomen, and spine.

The cord may be tied about two inches from the navel, and again an inch farther off, and then cut through near the first ligature with a pair of scissors. Dr. Burke (*Amour's's Pseudo-science*) tells us with be-



roning gravity, that "a piece of murre, the tape makes the best ligature;" but I cannot conceive any reason for selecting one kind of a string in preference to another; and, in fact, if the cord is not covered too soon, there is no real necessity for a ligature at all, as we may learn from the examples of the animals around us.

**THE AFTER-BIRTH.**—The contractions of the uterus, which expel the child, also detach the placenta; and in most cases it lies loose in the vagina after delivery of the child. Sometimes, however, it is not entirely detached, or is still attached to some portion of the uterus by morbid adhesions. If no expulsive efforts are made in an hour or two—evincing by a recurrence of bearing-down pains—the cord may be gently pulled upon—*never forcibly*; and if the after-birth does not readily follow, gentle pressure may be made on the lower part of the abdomen with the hand; or the abdomen manipulated from above downwards. Should the placenta be retained several hours without expulsive pains, the hand may be dipped in cold water and applied as above, to excite uterine contractions. The sudden application of a cold wet cloth to the abdomen is often effected. After the removal of the placenta, a free vaginal injection of cold water is always harmless, and generally remarkably soothing and strengthening.

**AFTER-MANAGEMENT.**—Professors of midwifery instruct their pupils to *restraine their duties* in this matter by placing a bandage around the abdomen of the mother to prevent a "pendulous belly;" and another around the child to secure it against being "pot-bellied." All wrong again. They do not prevent such results. The most unsightly abdomens I have ever known occurred after severe bandaging. To the infant such an application is particularly cruel and barbarous. Its tender, flexible muscles cannot have too much freedom; and those humanitarian philosophers who imagine one portion of the body waste relieving by artificial supports, while all the rest is pretty well put together by Divine Nature, must have a very narrow opinion of her handiwork, as well as an exalted estimation of their own superior skill and taste.

The wet and soiled clothing should be removed from the bed as soon as convenient; and the patient supplied with clean linen; after which she should be allowed to rest as long as she feels so inclined. A tepid sitz-bath or lotion may be advantageously taken after resting awhile. It is a great mistake that lying-in women should keep their rooms or beds any prescribed length of time. But, on the other hand, there is nothing gained in being too hasty. I have known females in

the city take the entire charge of their infants from the moment of birth, and leave their mothers comfortably on the day after delivery; but if all should attempt to do so, none of them would soon certainly have the experience to regret. Whenever the parent feels list or exhausted, she should be allowed the most perfect repose, until her sensations indicate exertion. If she has been subject to palpitations, or severe heartburns, she should be guarded against exerting herself too soon. The rule for her to be governed by is, to sit and walk as soon or as much as she can without inducing pain, distress, listlessness or bearing-down sensations—but not to transcend those limits—with no regard whatever to time.

CONVULSIONS OF LYING-IN WOMEN.—There is no place where more mischievous meddling with the harmonious operations of nature is found than in the chamber of the lying-in woman; nor is any place more *abounding* in bad practice on the part of the physician; nor more infected with the errors, whims, miseducation, prejudices, and impositions of nurses. When the usual stimulating and soothing of the mother, and the stuffing and dosing of the child is taken into the account, we have an occasion to wonder that so many mothers have a "bad getting up," nor that so many children *deaf* and die. The mother is gorged with callop soup, puddings, cream-whey, soups, broths, and medicated stews, invariable to promote the lactal discharge, or increase the secretion of milk; and the child is made to swallow unfermented, sweetened wine, and other noxious and disgusting stuff, to "clear out the meconium," and afterward fed on magnesia, prepared chalk, and dased with aromatic seeds and pungent essences to "keep out the wind," and purgatives or leeches, or opium cordials, to quiet the pain and irritation which the dosing has produced. These dongs, which are almost universal in civilized society, indicate a stupid ignorance or gross perversion of the simple and efficient operations of nature, destroy thousands upon thousands of infants in their cradles, and lay the foundation for debility, imperfect development, and irreversible diseases in those who are so fortunate or unfortunate as to survive them.

The food of the mother should be essentially of the same nature as usual, having reference, of course, to the state of the system, amount of exercise, &c. The mother does indeed, to some extent, "eat for two," but the appetite will always demand food enough; and it may be satisfied short of overloading or oppressing the stomach. Bread and milk, or gruel with sweetened bread, cracked wheat, boiled rice, &c., with a moderate supply of ordinary fruits and vegetables, are suffi-

richly nutry for all useful purposes if the milk be deficient, while dry toast, crackers, good bread, potatoes, &c., are simply corrective when the breasts are overburdened with this secretion.

**ACCIDENTS DURING THE LIE-IN or PHASES.**—The majority of accidents and diseases which follow ordinary labors, are artificially produced, the result of meddling and meddling or bad nursing. The majority of medical writers on midwifery give directions for managing the patient, which, if strictly followed, could hardly fail to induce actual diseases. It is a common practice to administer wine or brandy, or camphor and carbonate of ammonia, if the patient seems exhausted and chilly after parturition; give opium if she is restless, and bleed or bleed if she is feverish, and take blood even if she is cold and shivering, if the practitioner suspects the shivering to be the cold stage of an approaching puerperal fever. Thus the whole organism throws into confusion and disorder, and called upon to waste its prostrated energies in reversing the effects of poison at the precise moment when it needs the most profound and undisturbed repose, both as regards external disturbances and internal sensations. A single extract from a standard text-book will show that I neither misrepresent nor exaggerate in this matter.

Dr. Hudson, as quoted by Dr. Condie, in Churchill's Midwifery, says:—“I have seen more than one instance in which there was reason to believe the life of the patient was sacrificed from ignorance of the true character of the condition here referred to [nervous shock or exhaustion after delivery]. If the attention of the practitioner be at the time particularly directed to puerperal fever, he is liable to confound the exhaustion in which he finds the patient with the early stages of that disease. The cold extremities constitute the shock, while the haggard countenance, hurried respirations, and frequent gushes are regarded as conclusive evidence of a rapid peritonitis. Bleeding from the arm or by leeches, at the instant resort, and a few short hours confirm the worst anticipations, by the fatal termination, a result which the efforts of the attendants have but too successfully aided in producing.”

Who can fail to see the “leaves of wisdom” taught by these fatal mistakes?—Leaches and leeches have no business in the lying-in chamber; and if they were always where they should be no women would be killed by them; the doctor might see in spiritus without causing the death of his patient. And here I may pertinently state a rule of universal application, which doctors, midwives, and nurses might often revert to advantageously. Whenever there is serious doubt as to

what ought to be done for the patient—do nothing—not climeos to one that while the doubts are being solved, nature will solve the difficulty.

*Flooding* sometimes, though rarely, occurs several hours after delivery. It is to be treated precisely as when occurring at any other time.

The lochial discharge, or *flowing*, sometimes ceases suddenly, or is suppressed by taking cold, or by inflammatory excitement; followed by distress or swelling in the abdomen, or pain in the head, some of symptoms, coldness, etc. The warm hip-bath or hot fomentations are to be occasionally employed until the action is re-established.

*Puerperal fever*, or *puerperitis*, is one of the most frequent and fatal diseases under midwifery practice; but I have never known nor heard of it among several hundreds of cases treated hydropathically. In fact, I consider this frightful form of fever an impossibility under judicious water-treatment. Medical authors distinguish several varieties or forms of this disease, as acute *puerperal puerperitis*, *adynamic*, or *malignant puerperal fever*, *puerperal intestinal irritation*, *fatal puerperitis*, etc.; but they are all merely accidental modifications or different degrees of severity of the same disease, which consists essentially in an inflammation of the puerperal membrane, sometimes, however, complicated with inflammation of the breasts or uterus, and attended always with a violent but low prostrating fever of the typhoid type. Among the more prominent symptoms are swollen, hard, and painful mammae, and obstinately constipated bowels.

There is no disease the pathology of which physicians confess themselves more ignorant of; and certainly there is none which has been more uniformly treated by the medical faculty, the deaths averaging about one in three cases.

The treatment is the same as for ordinary inflammation of the bowels: cold wet cloths to the abdomen, the pack or general ablution, warm foot-baths, cold applications to the head, and tepid injections. There is no danger whatever in applying cold wet cloths to the abdomen in these cases: the danger is in withholding them. I have known too many to sink rapidly under the hot mustard plaster and turpentine treatment, not to speak already on this point.

*Inflammation of the breast*, resulting in abscess or "broken breast," is among the frequent results of the system of kissing and decoying we oppose, and among the things unknown in hydropathic practice. Cold wet cloths, well covered with dry ones, and very often renewed, constitute the local treatment. When the breast has a surplus quantity of milk, it may be drawn off with the breast-pump, or by that over-



continued without pausing the breast-month. When the nipple is malformed or deficient, the breast-pump will often succeed in drawing it out.

It is no uncommon circumstance for a young mother, especially with her first child, to suffer terribly for three or six months, or even a year, with this loathsome complaint; and yet it can never occur if the system is kept free from obstruction by proper diet and bathing, and is not dragged.

*Sore nipples* require nothing more than a little cream; olive oil is simple enough, with the occasional application of cold wet cloths when they are hot or painful, and occasional fumigations when they are cracked and sore.

*Milk fever*, which is owing to an overheated or unventilated apartment, or to heating food, drink, or medicines, usually appears about the third day after delivery. It is attended with the ordinary symptoms of general fever; great pain and throbbing in the head, and, unless speedily relieved, a suppression of the secretion of milk. If the patient is not very weak or exhausted, the wet-sheet pack should be promptly resorted to, and repeated as often as the general heat demands; otherwise, tepid affusions are to be very frequently employed.

*Puerperal milked leg—phlegmasia dolens*—is yet another frequent occurrence in ordinary practice, but unknown in the Water-Cure system. This malady has already been considered in the chapter on Dropsical Diseases; and I need only add in this place, that the management is the same as for local inflammations generally: cold wet cloths, according to the local heat, and cold or tepid sparging or washing of the whole body, according to the degree of general heat.

## CHAPTER VII.

### INFANT NURSING.

**DRESS OF INFANTS.**—The first provision to make for the new-born infant is suitable clothing. All the usual bandaging and swathing is to be rejected, with every other article of apparel that in the least constrains its motions. After a washing in tepid water, a soft rag should be tied around the remnant of the cord, and the child dressed with the diaper, a loose shirt, a soft flannel petticoat, and an easy frock. On no

woman should say thing be placed or tied around the abdomen, or any part of the body, like a belt or bandage, unless for some surgical purpose.

**BATHING INFANTS.**—Every child should be washed over the whole surface daily: always, too, immediately after waking from sleep, and never soon after eating. The water should be of a mild temperature at first—85° to 90°—and gradually reduced to 70° or 65°.

**FOOD OF INFANTS.**—Grosser errors are committed in this department of infantile nursing than in any other, unless it be in that of dragging. Indeed, I know of no subject in relation to which our American nurses are so ignorant, or, rather, so full of errors as this. The women of England are far more intelligent in the method of rearing children healthfully; and the unintentional errors of some of them upon the foolish habits which prevail in this country, of stuffing and gorging young children on complicated dainties, sweet cakes, custards, and the like, though very serious, are perfectly just. No American mother could be induced to feed her child in the way children are generally fed in this country, if she knew the consequences.

Not long since a gentleman and his wife, from a neighboring state, were under treatment at one of my establishments. A child happened to be present which had been then far nursed hydropathically, and was a perfect picture of health and happiness. During a conversation about this child, she went to her trunk, and then exhibited the daguerotypes of three beautiful children she had lost. They were all fine, healthy children, and grew happily; but alas! at two, three, and four years of age they suddenly died of convulsions! After inquiring into her habits of feeding them, I could only wonder how they lived so long. Poor, childless mother! she still weeps for the lost ones; but I fear if others are born unto her, they will be lost in the same way, so difficult it is to teach a mother that her artificial appetite is no guide to the natural diet of a child.

The mother's milk, it is known, is the appropriate food during the first few months; but in cases where the breast does not yield a supply at first, a little sweetened milk and water is the best substitute. It must be remembered that, in the great majority of cases, the breast milk yield the food as soon as there is any real necessity for it on the part of the child. Nerves generally commence giving solid food too soon—as early as the third or fourth month. The first appearance of the teeth, about the seventh month, seems to indicate that as the natural period for commencing the employment of solid food. It is a

great mistake to suppose that all the food taken into the tender and delicate stomach of the infant should be fine, concentrated, divested of all insubstantial matter, and very nutritious. It is, on the contrary, even more important for children than for adults, that the food should be unaccompanied and unobstructing, as well as simple and unaccommodated. Farina, corn starch, fine flour, and refined sugar, are the fashionable materials for the infant's dietary; but a wiser selection could hardly be made. Graham flour, weak, cracked wheat, coarse Indian meal, barley, boiled rice, brown bread soaked in milk, boiled potatoes, stewed squash or pumpkins, roasted, baked, stewed, or boiled apples, &c., are the proper solid food for infants from the first moment that they are able to take any kind. This plan of feeding will secure the child against dysentery, cholera infantum, colica, gripes, spasms, convulsions, scrofulous swellings, skin diseases, painful teething, &c., &c., which annually sweep off so many thousands to their graves.

Improper diet has a vast deal to do with making children cross, fretful, and ugly-tempered, as well as dull, sickly, and stupid. The most healthy children may be spoiled so outrageously as to suffer continually from cramps, colics, and all sorts of aches and pains; and so feeling bad will not last, in spite of good conduct, parental authority, the nurse's lullaby, or the lullaby's end.

The practice of hurrying or forcing children to swallow flesh-meat, before they can properly masticate it, is deserving the severest reprobation. Scarcely any thing, in my humble judgment, has a more injurious effect upon the body or mind than this wretched Scotch fashion. Two or three years is early enough, and several years later is still better, for any child to first taste of flesh. But many mothers, perhaps the majority, stuff fat, grease, and flesh into their mouths before they are even weaned. Such children are always full of bad humors, or liable to severe inflammatory or febrile diseases every time they take a little cold; all of which may be avoided by feeding the child on such plain, simple, vegetable food as it always relishes, and will always be satisfied with, until its parents or nurses, in their deep, dark, and pitiable ignorance, pervert and deprave its natural appetite.

After being weaned, the usual time of which is at the end of nine or ten months, the child should be trained to regularity in the habit of eating; never allowed to eat between meals, nor after going to bed at night, until the next morning's breakfast-time.

The practice of forcing children simply to amuse them or keep them quiet, is also deserving severe reprobation; yet it is one of the fashions of these days. Those who travel much on our railroads or omnibuses will, if they are of pleasing habits, notice that a large

proportion of all the children aboard, from one year old upwards, have their hands full of candies, sweet cakes, or some other edible; and if their observing habits are close, they will also notice that those same children are crying, kicking, and yelling with toothache, headache, stomachache, and colicache, a good portion of the time. If the mothers of these children understood the connection between these causes and effects, they certainly never would be the instruments of inflicting so much misery on their little ones.

**DRINK OF INFANTS.**—Few words are required here. Those children who are fed properly know very little of thirst, unless it is derived from the bad dietary habits of the mother. Still, if thirst exist, water should be allowed ad libitum; but the greatest care should be taken to provide perfectly pure and soft water. Children are more injuriously affected than adults by impure or hard water. Salted or greasy food provokes excessive thirst in young children. Common brewers' bread induces great thirst in all children who are principally fed upon it—a conclusive evidence that it is not fit for them. Warm drinks, with which some nurses are so fond of stopping children, after provoking artificial thirst by artificial food or seasonings, tend to produce diseases and debility of the kidneys and urinary organs. It is an excellent practice to give the child a tea-spoonful of cold water two or three times a day, independent of its desire to drink. It soothes the irritability of the gums, and lessens the inflammation and tenderness during dentition.

**SLEEP OF INFANTS.**—Young infants are naturally disposed to sleep a large proportion of the time—an instinct which may be indulged to its full extent. It is essential, however, to the health and perfect development of the young child that it does not sleep with a sickly or aged person; and it is preferable to have it sleep in a crib or cradle-bed by itself, in all cases after weaning. The thorough ventilation of a child's sleeping apartment is even more important than that of the adult. Children do not often take cold from excess of air while asleep, but very frequently in consequence of sleeping in a hot or close room.

**EXERCISE OF CHILDREN.**—Young children, if healthy, are always in motion, except when asleep; and those mothers do them wrong who try to keep them still and out of mischief. The true philosophy of babyism is to keep mischief out of their way, and then let them run. They must exercise in play constantly, or be sick. A lazy or a quiet child is a sick one.



**EXCEPTIONS OF INFANTS.**—Nothing can exceed the absurdity of the common practice of dosing a young child, on every occasion of a little irregularity of the stomach and bowels. In most instances those disturbances are salutary efforts of nature to get rid of surplus, crude, or irritating matters. The curved shape of the infant's stomach enables it to retain with great facility; and in most cases the vomiting is the result of overfeeding, or offending material. In either case it will take care of itself if left to itself, and nothing put into it but proper food and drink in proper quantities.

The bowels are necessarily subject to some degree of irregularity. For a few days after birth the discharges will be dark and watery, consisting of the fecal matters, or meconium, which accumulates in the bowels during the latter part of the fetal life, mixed with the ordinary fecal excrement and mucus; gradually they become more yellow and of firmer consistence. When the teeth are pressing through the gums, the bowels are always unusually prone to looseness; and if the irritative fever attending is considerable, the looseness will amount to diarrhea. Here again, if we are not too blind, we may see the beneficent provision of nature to remove what seems to us to be accumulations. If the child is properly fed, no trouble need be apprehended from this source—the bowels will take care of themselves. In extreme cases of irregularity, either of diarrhea or constipation, no other medication is necessary than cool injections, with the wet abdominal bandage in the former case, and tepid injections, and perhaps a greater proportion of fruit, in the latter difficulty. The ideas of curing diarrhea in young persons by stringent medicines and constipating food, and constipation by purgatives, are both exceedingly mischievous in practice. Both complaints arise from irritation or debility, and healthy action is the potent remedy for both.

**TEETHING.**—The lax state of the bowels lessens, to a considerable extent, the inflammatory state of the gums during the protrusion of the teeth. The irritation can be further allayed by occasionally putting a tea-spoonful of cold water into the mouth. When the teeth are about coming through, rubbing the swollen gum with the finger is extremely soothing: when there is great heat and tenderness, a piece of ice infused in a rag and rubbed on the gums will alleviate the pain. Children often manifest, for a few hours, a high constitutional fever, the result of the local irritation. Beware of meddling with this fever in the way of drug-medication, as an inflammation of the bowels may be the consequence. I protest also against the common practice of cutting or boring the gums in children. Serious evils often result

from it, and all the good it promises can be secured by the other means I have mentioned.

**DIARRHOEA INFANTIS.**—From a little book (*Essays on Infant Therapeutics*), by the late John B. Beck, M.D., Professor of Materia Medica and Medical Jurisprudence in the College of Physicians and Surgeons of the University of the State of New York; Corresponding Member of the Royal Academy of Medicine of Paris; Corresponding Member of the Medical Society of London; one of the Vice-presidents of the Academy of Medicine of New York, *etc.*—these titles show that this book is one of authority—I copy the following sentiments:

"With regard to the effects of opium on young subjects, there are two facts which seem to be well established. The first is, that it acts with much greater energy on the infant than it does on the adult; the second is, that it is more efficacious in its action on the infant than the adult. It is in consequence of these peculiarities attending its operation on the infant, that even the smallest quantities have not unfrequently produced the most unexpected and even fatal results." Of this, almost every physician must have seen some melancholy examples. Dr. John Clarke states that half a drachm of syrup of white poppies, and also a few drops of Duby's cambricative, have proved fatal in a few hours. Mr. Marley knew a case in which half a small tea-spoonful of syrup of poppies proved nearly fatal, and one case in which thirty-five drops of Duby's cambricative proved quickly fatal to a young child. Dr. Bard knew an infant of several months old killed by one drop of laudanum, and another nearly killed by less than two drops. Dr. Christison states that three drops of laudanum in a weak infant six days old, killed a stout child, fourteen months old, in six hours. Dr. Ryan has known one drop of the "sedative liquor of opium" narcotize an infant. Pereira has seen a powerful effect produced on an infant by one drop of laudanum. The London Medical Gazette states that two drops of laudanum, and in one case one drop, resulted in the death of the infant.

In the Southern Medical and Surgical Journal for July, 1845, the following case was reported by Dr. N. V. Wooley, Lumberton, Alabama: "A fine, healthy female child, on the fifth day of its age, suffered from 'griping,' as its mother supposed, for which she administered to it one drop of laudanum. Thirty minutes afterward its breathing became slow and stertorous, and other symptoms of narcosis came on. Notwithstanding every effort made, the child died in eleven hours after."

If so many children die from the effects of such small doses, how cautious must be its cautious administration by the hands of nurses on any occasion when the child is afebrile, or refuses to keep as still as suits their comfort and convenience. It is an ingredient in most of our medicated candies and lozenges, cough-drops, soothing syrups, cordials, curatives, &c. Dr. Beck says: "The effect is to stunt the growth of the child; it is emaciated and pary; the skin is flabby and shriveled; the lips are bloated, and the countenance sallow and wrinkled. There is an absence of all intelligence, and the whole appearance is laggard and aged, presenting a sort of miniature of old age."

Now, as antimonial preparations are among the medicines which are freely given to children, and which enter into a great variety of ferret, cough, gastric, and colic medicines, and are even one of the medicating ingredients of candies, lozenges, and syrups, it behooves the people to know something about them. In the work above quoted, Dr. Beck tells us that he has known one thirtieth of a grain of tartar emetic endanger the life of a child one year old; and in another case a child was killed by small doses of the article. Dr. Clarke, of London, states that a quarter of a grain of tartaric acid of antimony in solution has produced the death of a young child. Dr. Hamilton testifies that alarming convulsions have followed its use. Mr. Noble, of Manchester, England, and Mr. Wilson, surgeon to the Gloucester Infirmary, report several cases of children of one to four years of age, dying from taking the common antimonial wine for ordinary cough and cold. Dr. Armstrong has many times seen delirium produced in young children by very small doses of antimonial preparations. Professor Schapf Merck, of the Children's Hospital in Pavia, Germany, certifies that he has known several children vomited and purged to death by very small doses of tartar emetic. Dr. McCready, of this city, reports a death from the article administered in the form of Coar's hore syrup.

Dr. Beck says: "The vomiting induced by the preparations of antimony ought to be resorted to with great caution in very young children, and should never be used except in those cases where a sedative effect is required, and can be borne with safety." The rule stands self-attested, for the frequent deaths resulting from its use in the hands of the experienced physician, show that no medical man on earth can ever know that it can be "borne with safety."

Mercurial medicines, in a variety of disguised forms, are more frequently taken into infants' stomachs than most people are aware of. Dr. Beck tells us that their action is more energetic in the infant than the adult, and that when saturation takes place its effects are most disastrous. "Swooning of the gums and cheek," says Dr. Beck, "pro-

and prostration and death, are by no means uncommon occurrences." Dr. West (*Diseases of Infancy and Childhood*) has known facial gangrene of the cheek, and necrosis of the jaw, to result. M. Denbighfield states (*Compend of Practice*), that he has known the parotid glands both abscessed and entirely destroyed by mercurial action in young children. Dr. Beck expresses the opinion that the practice of giving calomel as an ordinary purge to children, because of the facility with which it can be taken and retained, has laid the foundation for the rate of the constitutions of thousands.

I could extend these quotations indefinitely; but my purpose is to exhibit a reason why the whole trade of drugs should be rejected from the nursery at once and forever; and if the testimony already presented, which the reader will bear in mind is all taken from standard authorities of the school which advances the practice I am opposing, is not conclusive, neither would people believe though all their children should die under their own eyes. The little good that these execrable poisons seem to do in some cases, is counterbalanced a thousand fold by the certain injury. Besides, and more than all, there is never—I say emphatically never—any necessity for their employment. There is no conceivable disease, state, condition or ailment for which there is not a safer, safer, better way.

**INFANTILE DISEASES.**—A multitude of small books have been written on diseases of small children, in most of which the matter is treated as though it was as natural for babies to be sick as it was to breathe. Gum rashes, gripings, spasms, fits, running at the ears, thrush, scurvy or cancer, inflamed gums, &c., are usually regarded by this class of writers as things to be expected, and provided for by keeping a due assortment of medicines on hand. I need not waste time in exposing the absurdity of all this, which is self-evident to all who will take the trouble to think for themselves. The mother who chooses to rear her children according to the principles advocated in this work, will have little to do with "infantile diseases." And if she chooses to throw the responsibility of the health and well-being of her offspring upon the doctor, I can only pity her, and pray for her enlightenment.



## CHAPTER VIII.

## COMPLICATED LABORS.

**TERTIUM OR PROTRACTED LABORS.**—These result from a variety of causes, the principal of which are debility of the muscular fibres of the uterus; obliquity of the uterus; premature escape of the liquor amnii; excess of the waters of the amnion; unusual toughness of the membranes; and rigidity of the os uteri. In nearly all these cases, however, nature is competent to accomplish her work without our interference; and our main duty is therefore to exercise patience, and encourage the patient to do the same. In some few instances manual and medical assistance may be rendered. When the membranes protrude externally during severe pains, they may be ruptured with the finger, and the waters discharged, after which the labor will be rapidly finished. Females who have suffered much from leucorrhœa or gonorrhœa, are liable to a thickening of the mouth of the womb, rendering it inflexible, or, rather, causing its dilation to be unusually slow and painful. An occasional warm hip-bath will materially add to the comfort of the patient.

**PRETERNATURAL PRESENTATIONS.**—The statistics of over 300,000 cases, collected by various European practitioners, show that breech presentations occur now in about 53 cases, and footings once in about 90 cases. In 36,022 cases, 1,277 were breech presentations; 1,019 presentations of the inferior extremities; and in 203 cases the superior extremities presented. From these data we may see how rarely it there occasion for instrumental or manual interference, even under the present disease-producing habits of the civilized world.

In the great majority of these preternatural presentations, the labor can be accomplished by the efforts of nature alone. Those which most frequently require assistance are presentations of the superior extremities. The general remedy in all these cases is version, or turning, except in cases of badly-deformed pelvis, or enlargement, or some other deformity of the child, when, when necessary, may have to be resorted to, or, as a preventive measure, premature labor induced.

**OPERATIONS IN MIDWIFERY.**—The operations in complicated cases

of *midwifery* which are considered as regular, are turning, the reduction of premature labor, the forceps, cesarean, and hysterectomy.

*Turning*, or *evulsion*, consists, whatever may be the part presenting, in bringing forward the feet, thus converting the case into a footling. The statistics of English, French, and German practice together show that the operation has been performed once in about 120 cases. In English practice alone it was performed but once in over 250 cases. It is sometimes resorted to in cases of convulsions, flooding, protracted card, etc., in order to terminate the labor sooner. It is generally proper and often indispensable in presentation of the superior extremities or trunk, and in presentation of the placenta, which are attended with alarming flooding.

In performing this operation, the hand is introduced very gradually during the intervals of the pains, the fingers being kept in a conical form, following the curve of the pelvic passage, until the fingers and hand are gently insinuated through the os uteri, and through the membranes, if they have not been ruptured. If the shoulder present, it can then be pushed upward, and the hand brought down to the oblique diameter of the brim of the pelvis, and the labor thus left to the efforts of nature. If the case is an arm presentation, the hand is to be pushed along the arm until it reaches the body, then passed over the front of the chest and withdrawn to the foot. After one or both lower extremities are reached, the feet are to be brought, with a gentle, waving motion, to the pelvis, during the intervals of the pains, which accomplishes the turning; after which the labor is looked on as original footling presentation. The feet, in turning, are to be brought over the front of the child, and as the feet are drawn down, the nuchal head or arm will ascend. The labor will then be concluded without further assistance in most cases; but if the patient be in a state of extreme exhaustion, it is proper to exert a moderate extracting force upon the feet during the pains.

The proper time for commencing this process is as soon after a sufficient dilation of the os uteri as possible. As preparatory measures, the bladder and rectum should always be emptied. Madame Desrois performed this operation 118 times, with a loss of 48 children.

*Premature labor* may be justifiably induced in such known deformities of the pelvis as will not admit of the delivery of the child in the full period. The operation has been very rarely undertaken by regular physicians in any country; and the results, so far as statistics have been gathered, show that about half the children survive, while the mortality of the mothers is about one death in ten cases. No loss

thus six different methods of ending prematurely the uterine contractions have been advocated, the most effective of which are puncturing the membranes, or mechanical distention of the os uteri. Uterine action usually ceases on its own, two, three, or four days, and the patient requires the same management as in ordinary labors.

The *letror*, or *trois*, is not frequently employed in midwifery, yet, more frequently than it should be. Its first introduction into practice was "intended as a discovery calculated to confer immense benefit upon the human race;" but, like many other professional affairs, its reputation soon began to wane. Its use is said to be, "to correct malposition, or aid the natural motions of the head at the brim or in the cavity of the pelvis." My own opinion of the instrument is, that it ought to be excluded from midwifery practice altogether.

The *forceps* is employed rather frequently, and has been in use about two centuries. It is undoubtedly a valuable contrivance for certain morbid conditions and abnormalities. Its object is to grasp and compress the head of the child, and it can be then used as a lever or extractor. Authors specify a great variety of conditions and circumstances to which they are applicable; but in my judgment their proper employment is limited to cases in which uterine contractions fall from absolute exhaustion of the patient; in cases of convulsions, hemorrhage, or rupture of the uterus, demanding an immediate cessation of the labor, in order to save the life of the patient; and in cases of breech presentation, when the head is retained a long time from incompressibility of the base of the skull. In Dublin, Dr. Clarke used the *forceps* once in 748 labors; in Paris, Madame Lachapelle says in 203 labors; in Berlin, Dr. Kluge once in 10 labors; and Dr. Scholl, of Berlin, used them once in 7 labors. These figures show that they are employed more according to the fancy of the practitioners, than from the real necessities of the cases.

*Craniotomy*, which consists in opening the head of the child, and evacuating the contents of the cranium, is employed when there is too great disproportion between the size of the fetal head and the pelvis to permit the passage of the former, as in the case of deformed pelvis or dropsy of the head; also, when the child has been dead for some time without the labor progressing; also, when, from disease or accident, the head has been separated from the body; and, finally, when the passage is obstructed by immovable tumors.

There is another complication which requires this operation in its early stages for the mother; and although I do not find a similar case mentioned in any of the books, an instance occurred a few years ago in my own practice. It was a case of twins, one of which was a boy,

and the other a head presentation. The difficulty consisted in the heads, both of which were small, being locked in the pelvic cavity; the head of the foetus remaining fastened back of the head of the other. I did not see the patient until the labor was too far advanced to remedy the malposition, and hence was obliged to evacuate both heads before either could advance.

From the statistics of over three hundred thousand cases, it appears that this operation has been resorted to more in about eight hundred births. Of course, in those cases where the child is not dead, the operation contemplates a sacrifice of its life to save that of the mother; as, otherwise, both would inevitably perish.

A great variety of instruments have been invented for this operation. The *perforator* is commonly employed to open the cranium, and then the *crutch*, or cranial hook, to extract the fetus. A pair of long-pointed scissors, or a scalpel with the edge wound to very near the point, will answer. The principal point of skill consists in keeping the point of the instrument exactly in position during the operation, and avoiding injury to the surrounding parts. When the uterus is well dilated, the fingers may be employed as tractors more advantageously than any other instrument.

*Embryotomy* is a justification of *craniotomy*; it consists in dissecting the trunk and limbs, and leaving the fetus a prey to fragments, in those cases of cross presentations of the trunk or superior extremities in which the body is immovably fixed in the cavity of the pelvis, and in cases of deformation or malconstruction of the fetus.

*Hysterotomy*, or the *Cæsarean section*—as it is called after Cæsaræ Cæsar, who has the reputation of being the first who came into the world in this way—consists in making an incision through the abdominal walls and the uterus, removing the fetus and placenta, and then dressing the external wound by sutures and adhesive plaster. It is the dernier resort, and only justifiable when distortion or obstruction render all other methods unserviceable. In British and American practice rather more than half the mothers operated upon have been lost.

*Symphysiotomy*, or a division of the bones at the symphysis pubis, was proposed as a substitute for the Cæsarean operation by Sigault, who experimented in this way at Paris in 1777; and notwithstanding he was voted a rascal and a poisoner, the operation soon fell into disrepute, for the very good reason assigned by Dr. Hall, "every operation had its victim." I am not aware that any among the living authors justify the operation under any circumstances.

**FACE PRESENTATION.**—The face may present in either of two po-



ethos, as the forehead is toward the right or left scrobulum. The presenting part is known by the general inequalities of the surface, or by the recognition of distinctive parts, as the eyes, nose, mouth, or chin. After the labor is somewhat advanced, a swelling of the face may make it liable to be mistaken for a breech presentation. The bridge of the nose is here the best guide, presenting, as it does, a firm, sharp prominence unlike any other part.

These cases do not necessarily require assistance. The labor is more prolonged and tedious, and the child's head is often considerably bruised and lacerated, but seldom dangerously so. Patience is here the best doctor. The tables collected in the books show that this form of presentation occurs once in two or three hundred cases.

**BREECH PRESENTATIONS.**—In all these cases, as the child enters the cavity of the pelvis, its back is turned either anteriorly or posteriorly toward the symphysis pubis or sacrum. They occur, on an average, as appears from the statistical data, once in fifty or sixty cases. They may be distinguished from shoulder presentations by the variable course. The labor is not so tedious as in the preceding presentations, and is rarely dangerous to the mother, although it is hazardous to the child, more than one fourth of these born in this way having been lost. The duty of the midwife in attending in these cases is well stated by Dr. Churchill:—"As to the actual management, the less interference the better for the patient." Dr. Collins, another experienced practitioner, remarks to the same effect:—"The most common and dangerous error committed by the medical attendant arises from inefficient and unequal signs attempts to hasten or assist during the early stages of labor, thus, which we could not well adopt a more hazardous course."

**FOOT AND KNEE PRESENTATIONS.**—Experience shows that the inferior extremities present but once in about a hundred cases. The mortality among children has been somewhat greater than in breech presentations, although the danger to the mother is no more. When the feet present, the toes may point forward or backward, and one or both feet may be advanced. In knee presentations, this part is liable to be mistaken for the elbow; it may be distinguished by its two prominences, with a depression between them.

In these cases, according to the authorities of the most experienced writers, it is even more important that the labor be let alone or left to itself than in either of the preceding varieties of malposition.

**PRESENTATION OF THE SUPERIOR EXTREMITIES.**—In nearly all of

these cases the shoulder is the part primarily presenting, but afterward the arm prolapses; the back of the child may be turned toward the abdomen or spine of the mother, the former being the most common occurrence. In some of the instances of this presentation the labor has been accomplished without assistance, but in almost this is impossible. Its frequency has been one case in two or three hundred. Its danger may be judged of by the facts that, of the cases recorded, rather more than one half of the children were lost, and one in nine of the mothers. The diagnosis is difficult or impossible in the early stages. When the top of the membranes protrudes in a conical or elongated form without enclosing the head, a suspicion may be justly entertained; and after the labor has progressed somewhat the nails may be forced, which, with the round prominence of the shoulder, will convert the suspicion into certainty.

Turning is the proper resort in all these cases, and the best time to commence the operation is, as soon as the waters are as fully distended as possible. There is no danger in waiting so long as the liquor amnii has not escaped; nor is there much difficulty in turning in this case; but the difficulty is greatly increased afterward by the firm and more constant contractions of the uterus. If the contractions are intense, turning will be impossible, and the attempt then would enlarge the rupture of the uterus. In this case the whole abdomen should be wrapped with warm wet cloths to relax the muscular system and lessen the contractions; and the patient should drink warm water to the extent of ounces to aid in suspending the pains, after which the operation may be undertaken. Should all these measures fail, and turning prove impracticable, the only remedy is excision of the thorax.

**Compromised Prolapsations.**—In some rare cases, the hand or arm presents with the head, rendering the labor more difficult, but not uncommonly dangerous. If discovered early, the arm may be replaced above the head; but great care must be taken not to draw down the arm, as this procedure would convert the case into an arm presentation. If the replacement is not practicable it must be treated as an ordinary labor.

The feet and hands may present together, or one *abdominally*, attended usually with prolapse of the cord. As the labor progresses, one or the other extremity will descend, converting it into a footling or an arm presentation. By drawing down the feet, the most favorable position is secured; and this, if done gently and skillfully, can always be done safely; the attendant should be especially careful not to mistake a hand

for a foot, and in any way misdirected so as to lower the descent of the head or arm.

**PLURAL BIRTHS.**—The signs which denote twin pregnancy are extremely obscure. Each child has a separate placenta, and its special envelopes, and both are almost always smaller than usual. The labor may be in all respects natural in relation to both, or pretermatural; or one may present a natural and the other an abnormal labor. Hence all the directions mentioned for single labors are applicable to twins, triplets, etc. As many as six children have been born at one time, and four have been born alive. Statistics make the proportion of twins as rather above one in a hundred; and of triplets, one case in five or six thousand.

After the birth of the first child there is an interval of rest, varying from a few minutes to several hours; in many instances, several weeks have intervened between the birth of the first and second child. In the majority of cases, however, the expulsive efforts of the uterus are renewed in less than half an hour. If the placenta of the first child is not easily removable, it should be left until after the delivery of the second one; and the same rule applies to triplet and quadruplet cases.

**MONSTROSITIES.**—In all of these cases there is excessive or defective development of some part or parts of the fetus, or two fetuses are conjoined. The only practical point relates to the obstacle which their bulk furnishes to the unimpediment of the labor; and here, when the deformity or monstrosity is too great to allow its passage, embryotomy is the necessary and only resort. In some cases of double monsters, as the Siamese twins, both have been born alive. The principal diseases which produce such morbid enlargements as to render the child disproportionate to the natural passages are, dropsy of the body, and dropsy of the head—*anæmia* and *hydrocephalus*. In the former cases, after the expulsion of the head, it will readily be discovered that the distension of the abdomen prevents the delivery of the body; and in the latter case the head is presented at the brim of the pelvis of unusual size and nearly incompressible; and, notwithstanding strong uterine contractions, or "good pains," the head does not descend into the pelvic cavity. In either case the child is either dead or in a dying condition; there need be no hesitancy in commencing or completing the dissection of the head. In festing cases of hydrocephalus, the head is to be perforated behind the ears.

**PREGNANT CERVIX.**—The unskilled and may mistake alone, or with

the presenting part, either at the commencement or during the course of labor. This accident has no influence on the labor, but endangers the child, by obstructing the circulation of the cord. Statistics indicate its occurrence once in about two hundred and fifty cases, with the loss of about half the children. A great variety of plans have been suggested, and many of them tried to remedy this difficulty; but some of them are hazardous to both mother and child, and all uncertain; my own opinion is decidedly in favor of the let-alone practice in preference to any thing yet proposed. In this way the mother's life will never be endangered, while the chances for the child are scarcely lessened.

**RETAINED PLACENTA.**—Obstetricians differ as to the time a retained placenta should be left to the efforts of nature before proceeding to extract it by force. Some are for waiting only an hour; others several hours; and others still oppose its forcible extraction at any time except when hemorrhage attends. It is certain that it will slough off and be expelled sooner or later, but practitioners have generally apprehended dangerous inflammation. Under the ordinary practice, there is very great danger in this respect; but with a more rational philosophy, and more efficient appliances to keep down inflammation, the hydropath can justly entertain greater hope in his own resource, as well as greater faith in nature.

The irregular contraction, or "hour-glass contraction" of the uterus, by which the placenta is retained, has been noticed frequently to follow the use of ergot, and sometimes the employment of stimulents.

**HÆMORRHAGE.**—Fluorag, accompanying labor abortion, has already been considered. During the last month of gestation, at the commencement of labor, two forms of hæmorrhage are liable to occur; one is called *accidental* because it arises from an accidental and partial separation of the placenta while occupying its usual situation; the other is termed *unavoidable*, because the placenta is placed over the os inter, and unavoidably separated as the dilatation progresses. Hæmorrhage from these sources, according to the statistics, occurs once in about one hundred and fifty cases. In the first variety, the discharge occurs only *between the pains*; whereas, in the second variety, it is increased during the pains, yet continues also during their intervals.

When the hæmorrhage occurs before complete contraction takes place in the uterus, the ordinary measures to correct it should be resorted to, as the horizontal posture, a cool room, hard bed, cold water-drinking, and cold enemata, to which may be added, in severe cases, the tangles of two silk handkerchiefs. When the full term of gesta-



tion has arrived, and actual labor pains have commenced, the operation of turning should be resorted to as soon as the os uteri is sufficiently dilated, provided the hemorrhage continues dangerously alarming.

**CONVULSIONS.**—Convulsions of the *clonic*, *epileptic*, or *epyleptic* character, are among the incidents of complex labors noticed by midwives. They may occur previous to, during, or after parturition. Epileptic convulsions are much more frequent than either of the other kinds; and among all the cases recorded, only one is about six hundred have been affected with either kind. When the fits occur during labor, the uterine contractions are seldom interrupted by them.

Writers on midwifery are very consultative as to the proper treatment to be pursued in these cases. The majority insist on large and repeated bleedings and strong purgatives; others add to this leeching, cupping, and blisters; and others add to them all opium and tartar emetic. Dr. HASTON testifies that he tried the bleeding practice in one case, and the patient had a tedious recovery. In the next case, he used an exactly opposite method—gentle stimulants—and the patient did much better. His experience strikingly illustrates the benefit of “choosing the least of two evils.”

The general plan of treatment for these fits is precisely the same as when they occur at other times: warm hip and foot baths, cold applications to the head, &c.

**PRENATAL MANIA.**—Tetraparty delirium, or mania, often accompanies the latter stage of labor. It is manifested by incoherence of language, and appears to be occasioned by the extreme suffering experienced at that time by very irritable and nervous females. It generally passes off as soon as the labor is finished, and the patient has become partially composed. In some cases it results from an accidental suppression of the lochial discharge; and occasionally it seems to result from the irritation attending the lochial secretion. As it is always *symptomatic*, attention is only required to the primary difficulty.

**LACERATIONS.**—Rupture of the uterus, or vagina, and lacerations of the perineum, are fortunately among the extremely rare complications. They may result from disease of the parts, producing a softening of the structures or obstruction of the passages, from the injudicious use of instruments, or improper interference with natural labor. It is only necessary to say, in relation to all these accidents, that they require the attention of the experienced surgeon.

**INVERSION.**—An inversion of the uterus may result from a forced or too quick delivery, pulling upon the umbilical cord, preternatural attachment of the placenta to its fundus, or a tumor adherent to its fundus. It is denoted by the external protrusion, and the absence of the contracted uterus in the lower part of the abdomen. There is generally considerable hemorrhage, and the patient always becomes moderately dusky pale, faint, and sick at the stomach; the voice is weak, the pulse rapid and fluttering, and inordinate claudication sometimes takes place.

In all cases, whether the inversion be partial or complete, its reduction should be attempted at once, by pressing the protruded portion gently, but *forcily*, up through the vaginal passage. Its complete replacement will be known by its suddenly springing from the hand, after it has been nearly restored to its position.

When the placenta is still attached to the uterus, authors are divided in opinion whether it should be removed prior or subsequent to the replacement. The best rule appears to me to be this: if the attempt can be made immediately after the accident, not to wait to remove the placenta; but if a considerable time has elapsed, the contraction will probably make its removal indispensible to success, so that the safer way is then to remove it before any attempt at reduction.

## APPENDIX.

The following paragraph, having been evidently omitted in its proper place, must find an opposite to, and the conclusion of this work.

**THEORY OF CONCEPTION.**—The sciences of medicine and physiology during the last hundred years, together with extensive observations and experiments which have recently been made, in relation to the reproductive function, have constituted a fact of immense importance in physiological improvement and human happiness. It has been demonstrated that generation in the human animal is effected—as in all mammals, as well as with birds and reptiles—by the development of germ-cells, or eggs in the female, and their fertilization by the male. These ova are formed in the ovaries, and are passed to the uterus and thence expelled independently of fertilization or actual intercourse. During each menstrual period an ova is transmitted to the uterus, where it remains several days, varying in time usually from one to two weeks, though, in a majority of cases, it is passed off between seven and twelve days. But if, before its expulsion, it becomes impregnated by sexual connection, it remains and becomes the embryo of the future being. Now, a knowledge of the law of conception places the existence of offspring, and the future population of the world, entirely within the control of the will, reason, and judgment, instead of leaving them as a revelation, at the mercy of a blind impulse or accidental position. A thousand systems will serve to any reflecting mind which, in certain places and under certain circumstances, a less numerous but better quality of human population is desirable. There are the thousands of married persons in the world, whose circumstances of existence and position render many children a burden of expense to the parents and misery to the offspring; and again, there are thousands of infants, crippled, deformed, feeble-minded, or incurably diseased persons. Being in the matrimonial relation, who are unable of propagating an inferior race, but who ought not to be running and cursed with offspring at all; and, finally, notice the feeble, enervated, degenerately physiological kinds of the vast majority of civilized people, there is a tendency to numerical increase, with corresponding imperfection of offspring. Against all these evils and mischiefs, a knowledge of the origin of life affords us the remedy. And who shall say that a knowledge of the origin of life is not as legitimately to be sought and understood as a knowledge of the growth, development, education, and preservation of life. It is true that, in some free instances, the ova is expelled in two or three days after the cessation of menstruation; and in some rare cases

It does not pass off until after the twelfth day; but there are only exceptions to a general rule; and as impregnation can only occur, as a general rule, between the commencement of the menstrual excretion and twelve days after its cessation, those who would not propagate have only to abstain from sexual connection during this period. I am aware that some may object, as others have supposed, to enlightening the general mind on this matter; that many persons, dividing the cows, papists, &c. &c., of a country will abuse the privilege it confers, and refuse to bear their share of the burdens of fertilizing the world with intellects, and the stars with variable winters and summers for the masses. But I have no sympathy with the advocates for ignorance in relation to this or any other physiological law ordained for man's government. If God has made the law, it is man's privilege to know it, and his duty to obey it; and, further, if there are such grounds in evidence as the objection suggests, they are themselves the strongest argument I can adduce in favor of my position. They sh. *ould* never be permitted.



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